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MENTONE

AND

THE RIVIERA

AS A WINTER CLIMATE.

BY

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AND LA SALPETRIERE).

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CONTENTS.

CHAPTER I.

PAGE

INTRODUCTORY REMARKS 1

CHAPTER II.

MENTONE—SITUATION—CLIMATE AS EVIDENCED BY VEGETATION—GEOLOGY—AGRICULTURAL GEOLOGY—METEOROLOGY—THE MEDITERRANEAN . . . 6

CHAPTER III.

MENTONE IN ITS MEDICAL AND SOCIAL ASPECT . . . 55

CHAPTER IV.

A TOUR IN SEARCH OF A BETTER CLIMATE 79

APPENDIX.

THERMOMETRICAL TABLES 99

PREFACE.

THE following pages embody the experience of two consecutive winters passed at Mentone on health grounds—1859-60 and 1860-61.

The harassing labours and cares of a London professional life had broken down vital powers, and obliged me to seek abroad rest and a genial winter climate. The reminiscences of former travel led me to the Riviera, and the ties of friendship to Mentone. I soon became convinced that the choice was a fortunate one, and remained there throughout the winter.

The second winter I wished to find a locality even more favoured, and sought for it in Italy. The search, however, was vain, and after suffering severely from the unhygienic state of the large towns of that classical land, I turned back, and

again took refuge in my old quarters at Mentone. This second trial proved even more satisfactory than the first; I have, therefore, determined to wander no more, and to adopt Mentone as a permanent winter residence.

The greater part of the present essay has already appeared in the pages of a medical periodical, *The Lancet*. I have been told that it may be of use to others, and therefore republish it in a rather extended form.

August, 1861.

60, Grosvenor Street,
The Ferns, Weybridge, } From May to October.

MENTONE AND THE RIVIERA.

CHAPTER I.

INTRODUCTORY REMARKS.

THERE are few Italian travellers to whose mind the word "Riviera" does not recal the recollection of happy days of leisurely vetturino progress along a sunny, picturesque coast, overshadowed by bold mountains, and inhabited by fishermen, who, on a fine autumnal evening, often seem to realize the scene of the market chorus in "Masaniello." To me, when overtaken by ill health, and obliged to abandon, for a time at least, the hard work of active life, it was quite a consolation to feel that I could migrate to this sunny coast, and conscientiously spend a few months in legitimate idleness in a spot which memory painted in such glowing colours. In this instance, also, the memories of the past were fully verified by the realities of actual experience; and now that rest and the sunny southern climate have, in a measure, re-

stored me to health, I am desirous to make the Riviera, and especially Mentone, known to the tribe of sufferers obliged to fly from England, "merrie" in winter only to the hale and strong, who can defy and enjoy the cutting winds, the rain, the snow, and the frost of a northern land.

The peculiarly mild climate of western Italy, and especially of the coast-line of the Gulf of Genoa, known under the name of Riviera di Levante, and Riviera di Ponente, or Eastern and Western Riviera, is much more referable to the protection afforded by mountain ranges than to latitude. The Alps and the Apennines form an immense screen to the north-east, as will be at once perceived on consulting the map of Europe. The Swiss Alps, which terminate rather abruptly in the plains of Piedmont, by the grand Alpine heights of Mont Cenis, Mont St. Bernard, Mont Simplon, &c., are continued in Savoy and Dauphiny down to the Mediterranean at Cannes and Nice. From Nice the mountain range, which then takes the name of Maritime Alps, skirts the shore of the Gulf of Genoa in a north-easterly direction as far as that city, and in a south-easterly direction as far as Lucca. At Genoa it unites with the Apennines, or sooner becomes the Apennines. At Lucca the latter leave the coast, and then occupy

the centre of Italy, forming a kind of backbone, as far south as the Gulf of Otranto.

It is owing to this geographical fact that the health climates of Italy are limited to its western shores. The mountains we have described separate Italy into two longitudinal sections, from Nice to the Gulf of Otranto, and as these mountains rise from four to seven thousand feet in height, they constitute a barrier which protects the entire western coast-line from the north-east winds of central and northern Europe. Thence a totally different climate throughout the Italian peninsula, on the east and west of the Apennine ridge. On the eastern, or Adriatic side, in the plains of Piedmont, Umbria, the Marches, &c., owing to the predominance of the cold winds from the centre and east of Europe, the winter and spring are very much colder than on the western or Mediterranean side; the one on which we find the Italian health cities, Pisa, Florence, Rome, Naples. The western coast of Italy is not only thus protected from the north-east winds, but is open to the warm south-west winds, which very often blow from the Mediterranean during the winter, and bring with them warmer sea-currents.

This protection from the north-east, and exposure to the south-west, gives to the entire region described,

from Nice to Reggio, a mildness of winter climate which latitude alone would not impart. Thus Nice and Mentone, two of the most sheltered and warmest spots on the north coast of the Mediterranean, are situated only in latitude 42°, considerably more to the north than Marseilles or Montpellier. But the latter are unprotected northwards by mountain ranges, and, consequently, severe frosts take place every winter. Nor is this surprising, when we consider that in the north and centre of Europe the ground is often covered with snow for months during winter, and that a high wind travels at the rate of from thirty to forty miles an hour. The distance, say, from Lyons to the Mediterranean, being merely about two hundred miles, a high north wind would reach the coast-line in a few hours, where unimpeded by mountains, bringing with it cold weather to all unprotected regions.

During the winter the most protected and warmest part of this western coast of Italy is the Riviera di Ponente, or Western Riviera. The exceptionally mild winter climate of this region is principally to be attributed to the mountain range skirting the shore; so that, as one of its names implies (Cornice), the coast-line is a mere ledge at the foot of the mountains which protect it north and east. My

knowledge of the Riviera is principally derived from residence at Mentone, for I have merely examined the other parts of the Riviera as a traveller. The general meteorological conditions of the coast are, however, so far identical that I presume the facts observed in one region apply to all, with such slight modifications as the greater or less amount of shelter implies. I shall therefore first describe Mentone and its climate as I found them, and then point out in a separate chapter in what respect the other regions of the Riviera appeared to me to differ from Mentone.

CHAPTER II.

MENTONE.

SITUATION—CLIMATE AS EVIDENCED BY VEGETATION—GEOLOGY—AGRICULTURAL GEOLOGY—METEOROLOGY—THE MEDITERRANEAN.

MENTONE is a small Italian-like town of five thousand inhabitants, situated in latitude 42°, twelve miles east of Nice, at the foot of the Maritime Alps. It is the first station out of Nice on the Cornice road to Genoa, is the largest town of the principality of Monaco, and has recently been annexed to France along with Nice.

The Gulf of Genoa is formed, as stated, between Nice and Genoa, by the Maritime Alps, the immense masses of which descend to the sea so abruptly in some places as to leave no shore, their beetling crags terminating directly in the sea. This is the case immediately behind and to the eastward of Nice. Owing to this circumstance, there was formerly no continuous land-road from Nice to Genoa. The one that now exists is of recent origin, and has been carried in many places over and along high mountains and precipitous

cliffs. Where the shore exists, it is generally a mere rocky, shingly, or sandy ledge, from which the mountains rise directly.

On leaving Nice for Genoa, the road at once begins to ascend the Turbith, a mountain about 3000 feet high, and one of the spurs that run directly into the sea. It is at the foot of this mountain that Nice lies. The ascent occupies two hours, the descent about the same time, and at its termination is situated the town of Mentone. When the traveller has crossed the Turbith, and begins to descend, a glorious panorama opens before him. The higher mountains receding from a beautiful bay open to the south-east, form a magnificent amphitheatre, which at its centre is about five miles from the sea. The coast outline of the bay, some four miles in circuit, is divided into two unequal portions by a hill, which gradually slopes to the sea, and on the sides of which climb the houses that constitute the old town of Mentone. The space between the sea and the receding mountains, which are between 3000 and 4000 feet high, is occupied by a series of lower hills, which slope gently to the shore, and which are divided by numerous ravines and torrential valleys. The higher range of mountains, of a greyish-white limestone, is generally precipitous

and bare, all but destitute of vegetation. The lower hills, from 500 to 1500 feet high, are densely covered with pines and olive-trees, and present at a distance the aspect of forest-clad, rounded ridges, gently descending to the sea.

Thus the bay in the centre of which Mentone is placed, with its background of rising olive-clad hills, is thoroughly protected from the north-west, north, and north-east winds by the higher mountain range. Beyond the latter are the still higher mountains of the Col di Tende, 7000 feet high, which constitute the main mass of the Maritime Alps, extending for sixty miles inland, and which greatly increase the protection. Indeed, the bay is only open to the south, south-east, and south-west; consequently, the mistral, as a west or north-west wind, is not at all felt; and but very slightly as a deflected south-west wind. The north wind passes over the higher mountains and falls into the sea at some distance—a couple of miles—from the shore. When it reigns, there is a calm at Mentone, and the sea near the beach is also calm, whilst at some distance from the shore it may be crested and furious. This I have often witnessed from the hills. The north-east wind leaves the town and hills untouched, but when strong, raises a heavy sea;

whilst the east (the *levante*), the south-east (the *sirocco*), and the direct south, blow directly into the bay, and always occasion a heavy, rolling swell.

Climate as evidenced by Vegetation.—Owing to the complete protection from the west, north-west, north, and north-east winds, and owing to the reflection of the sun's rays from the sides of the naked limestone mountains which form the amphitheatre, the winter climate of Mentone is rather warmer than that of Nice—warmer, indeed, than that of any part of the northern or central regions of Italy. The peculiar mildness of the winter at Mentone may also be partly accounted for on geothermal (earth heat) grounds. It is well known that even in England the warmth imparted to the superficial strata of the ground by the summer heat is not exhausted by radiation until the winter be far advanced. Thus, at three feet from the surface it is only at the end of January that the soil has cooled to its lowest point, that is, has exhausted by radiation the heat accumulated during summer. How much more decided must be the winter radiation of summer-accumulated heat in a locality like Mentone, surrounded by an amphitheatre of limestone rocks, which must become heated to an extreme extent during the long summer days under

the rays of an all but tropical sun and in a cloudless sky! The importance of this element in the consideration of climate will be better appreciated when we know that it takes at least six months for a thermometer to cool down after the glass tube has been closed by momentary exposure to the flame of the blowpipe.* It is only after that lapse of time that the glass has regained a normal state, and that it can be graduated, when scientific precision is in view; so retentive of heat are most solid bodies, and so long a period of time does it take for them to lose by radiation heat once acquired.

The exceptional warmth of the winter climate of Mentone, even for the Riviera, is proved by the presence of groves of large, healthy lemon-trees, which occupy the sheltered ravines and the warmer hillsides, wherever water can be obtained; constant irrigation, summer and winter, being necessary for their cultivation. They are, indeed, much more numerous than the orange-trees, although many fine plantations of the latter are found throughout the district. Orange-trees can bear without injury several degrees of frost, whereas one degree destroys the fruit of the lemon-tree, and two or three degrees destroys the tree itself.

* Drew's Practical Meteorology, p. 42.

On one side of the second bay, near the Pont St. Louis, the warmest and most sheltered region of Mentone, the side of the mountain is partially covered with lemon-trees, which ascend on terraces to a considerable height above the sea. In these "warm terraces" winter certainly may be said not to exist. Throughout its entire duration insect life is abundant, and the swallows consequently never migrate. They are constantly seen circling among the rocks. The harebell, the red valerian, violets, and our own pretty veronica, flower in December and January in this favoured spot long before they appear elsewhere.

The lemons produced at Mentone are known throughout northern Europe, and fetch a high price in the market. The lemon-tree at Mentone flowers all the year through, never resting, and bears four distinct fruit crops. Its existence in groves of large trees, from twenty to thirty or more years old, without artificial protection, and its profitable cultivation throughout the year, prove that there must have been freedom from severe frost for many years. I was told, however, that about twenty-five years ago nearly all the lemon-trees in the country were destroyed in one night, which may account for no very old trees being seen.

During the severe winter of 1859-60 the thermometer descended to zero several nights consecutively near the seashore, slight films of ice forming on flakes of water on the road and near the torrents, and the highest mountain range being covered with snow to the level of the olive groves. This alarming state of things occasioned profound dismay in the minds of the inhabitants, whose principal riches are the lemon groves. For several nights many of them sat up, in the greatest consternation, watching the thermometer. Indeed, there was a complete panic with reference to this lamentable and unheard-of condition of the weather. Such feelings and fears plainly indicated that frost and snow were very unusual and unwelcome visitors. Snow often lies for a few days on the upper regions of the higher mountains in a most picturesque manner, but on this occasion a few flakes appeared on the shore level. On no other part of the Cornice road do lemons grow thus freely. At Cannes they are all but unheard of, and at Nice they only grow in sheltered and protected sites, and not luxuriantly. The latitude of Sicily, which is four degrees further south, must be reached to find the lemon-tree growing with the same luxuriance.

The orange-tree flowers but once in the year, and

bears one crop of fruit only. It is a more hardy tree, as this botanical fact implies, and can bear without injury several degrees of frost. This impunity does not, however, apply to the same extent to the fruit, which matures in autumn and winter, and does not attain excellence where the winter is cold. There are many fine orchards of orange-trees at Mentone, especially the one at the base of the Cap Martin. Although the trees are large, and the fruit ripens well, the oranges are not equal by any means to those we get from the Azores. I am inclined to think, however, that the deficiency is owing more to neglect in cultivation than to defective climate; for some produced by trees growing in the vicinity of Monaco, only a few miles distant, and in a locality presenting the same climatic condition, are very good.

Throughout the winter the orange groves, covered with their golden fruit, form quite a feature in the landscape, reminding the looker-on of the garden of Hesperides of olden times. From the regularity of its growth, the abundance and golden hue of its fruit, the orange-tree is a much more picturesque object than the lemon-tree. The fruit of the latter is always either green or a pale yellow, and the habit of the tree, young or old, is rather straggling. Both lemon and orange-trees, whenever

they emerge from the valleys, contrast vividly, by their bright green tinge, with the sombre green of the olive-trees.

The olive-tree is the real lord of the Mentonian amphitheatre, covering the lower hills and the base of the higher ones to a height of about fifteen hundred feet above the level of the sea. In the south of France the olive-tree, however fertile, is a miserable object. It is generally treated as a pollard, is small and dwarfish, and looks much like a dust-covered pollard willow. As soon, however, as the Estrelle mountains are passed, and Cannes is reached, we enter on a different climate, more protected in winter, and more suited to its growth. It is here allowed to grow as a forest tree, and at once assumes a dignity and grandeur which quite surprises those who have only seen the stunted specimens of "la belle Provence." The olive-tree can bear with impunity several degrees of frost, so that it is not injured or destroyed on the Riviera by exceptional winters, as are the delicate lemon-trees. No frost to which this region is exposed on the coast, even once in a century, can injure it, so that it goes on growing indefinitely, and attains its natural period of longevity, as do with us trees natives of our country, such as the birch, the beech, the Scotch fir, and the

oak. Like them, it resists the terrible cold of exceptional years, such as the one we have just passed through (1860-1), and reappears in spring hale and vigorous, when whole armies of naturalized foreigners have succumbed.

The longevity of the olive-tree in a congenial climate, like that of Mentone, may indeed be said to be indefinite. There are olive-trees still alive at Monaco, at the Cap Martin, and elsewhere, which are supposed to be coeval with the Roman empire. It is a slow-growing tree, and forms cartloads of hard roots, which fill and cover the ground where it stands. When, after several hundred years, the trunk decays, the bark remains alive. As the decay progresses, the tree splits, as it were, into two, three, or more sections. The bark twists and curls round each of these decayed sections, and unites on the other side. Then, instead of the old tree, we have, in its place, two, three, or more apparently separate, although in reality all growing from the same root. When these in turn die, new shoots spring up from the old roots, and thus the life of the tree is indefinitely prolonged. The old olive-tree groves are, from this cause, indescribably singular and interesting, presenting on every side evidences of hoary old age. All the stages of growth above described

may be witnessed within the space of a few feet; and the partially decayed, partially split, gnarled, twisted, curved trunks are picturesque in the extreme.

The healthy full-grown olive-tree is really very beautiful. It is often as large as a fine large oak, but with fewer limbs and a more sparse foliage. In the olive-tree the terminal extremity of the branches hangs down, so as to give it the characteristic appearance of a weeping ash or willow. The "weeping" character of the tree is, however, much less marked than in those just mentioned, owing to the more scanty foliage, and to the extremities of the smaller branches only drooping. To some who are sad, to mourners, the dense masses of these sombre-hued trees, with hanging foliage, give a sorrowful, mournful character to the landscape. But it is only those who have sadness in their hearts, a sadness which deflects on nature, who view the olive-tree in this light. To others, the play of the wind on the ever-moving pendulous masses of foliage, and that of the sun and light on the dark green leaves, is both beautiful and soothing.

I never fully appreciated the beauty of the olive-tree, although I had seen it in its glory in southern Italy, until I had passed a winter under the shadow

of an olive-clad mountain at Mentone. The fact is that the olive-tree, like our own evergreen spruce and Scotch fir, is much more beautiful in autumn and winter than in early summer. At this period most of the leaves are old, and have become browned by the summer heat and by at least a year's existence, so that the entire tree often assumes a faded, dingy hue. In spring the new leaves form, in summer and autumn the old ones are in a great measure cast off; and when winter comes, the evergreen tree is in all its glory. It has thrown off its worn-out damaged garments, and is again clothed in the grace and beauty of youth.

Thus, instead of the brown, dust-coloured foliage, which the pleasure traveller sees in his summer journey, the winter invalid sees leaves, sombre, it is true, but fresh and beautiful to look at, either from near or from afar. The scantiness of the olive-tree foliage in winter, also, is an advantage. It lets the sun filter pleasantly through, breaking its power without concealing it, and rendering a walk or a lounge in "the olive groves," even in the hot midday sun, a pleasant resource. Many and many an afternoon have I spent at Mentone, in December and January, sitting with a book under the shade of an olive-tree.

Another evidence of the exceptional warmth of the winter climate is the presence of large euphorbia bushes and of large carouba-trees. The euphorbias in this region become shrubs, with ligneous stems. In many of the more protected regions they grow as large as rhododendron bushes. At Nice I only found them as luxuriant in one spot, the south-east side of the castle hill. In Italy the latitude of Sicily must be reached to find them equally luxuriant. They are singular plants, and grow in the most arid spots, on heaps of stones on the seashore, in the crevices of rocks, with a vigour and luxuriance which is perfectly surprising. Their growth seems to begin with the autumn rains, when they throw out a mass of light-green terminal leaves; and they flower throughout the winter, early or late, according to species. The secret of the luxuriant verdure, under a burning sun, in the most arid spots, of such a mass of delicate foliage, is the existence of a kind of caoutchu in their white acrid juices. This gum prevents the evaporation that would take place from the leaves, and which would soon dry up the foliage of a plant growing under such circumstances, without some peculiar protection. The elegant white cinerea maritima grows freely in the same localities.

The carouba or locust-tree is really one of the

glories of this and of other barren but warm regions in the south of Europe. It is a beautiful evergreen tree, vigorous, fresh, and graceful, with an abundant light-green foliage. It grows in the most stony, arid, and burnt-up places; on rocks and on mountain-sides where there is not a particle of soil, and where its very existence is a marvel, a problem, a source of positive exultation to the beholder. Indeed, the carouba may be considered an emblem of evergreen vegetation, and a perfect botanical demonstration. It bears beans in pods, very useful for the nourishment of cattle. Such a tree cannot possibly live from its roots, for they only bind it to the rock on which it grows, by creeping into crevices, and laying hold of every inequality of ground. It must live in a great measure by its leaves, as probably most evergreens do to a very considerable extent.

The very existence of the carouba shows why vegetation is principally evergreen in arid rocky spots, where there is but little soil, and that little is principally formed by the pulverization of rocks. The scanty soil will not feed plants that only bear leaves for a few months in the year, wherewith to extract nourishment from the air; so nature supplies their place by evergreens, which have constantly, all the year round, millions of lungs, in the shape of leaves,

pumping nourishment, that is carbon, from the air. In northern climates, in high latitudes, in arid sandy soils, it is the evergreen conifers or fir tribe, the heaths, and the hollies, that thus apply to the air for the nourishment refused to them by the soil. In southern latitudes, such as Mentone, it is the orange, the lemon, the olive, and higher up in colder regions conifers again, as in the north, that play the same part. Thus is explained the fact of the vegetation of the Mentonian amphitheatre, a mere rocky mountain-side, being nearly all of an evergreen character. No other kind of vegetation could live and thrive there. The few deciduous trees, such as oaks, planes, and willows, that are found, are principally met with along the margin of the torrents as they approach the sea, where alluvial soil has been deposited.

Above the olive-tree elevation, that is, above 1500 feet or thereabout, pines only are met with naturally, although fruit-trees, apples, pears, cherries, and vines, are cultivated, as around St. Agnes, a mountain village. The pines occupy the highest regions of the lower hills, and climb up the base and, where not too precipitous, the sides of the highest or back mountain range. From the shore level they appear mere shrubs, owing to the great elevation, but once they

are reached, they prove to be respectable-sized trees. Still these pine forests certainly contain no timber "fit for building men-of-war," as a member of the House of Commons recently stated during the debate on the recent cession of Mentone and Roccabruna to France. They contribute but little to the wealth of the country, and are of but little use except as firewood.

The rarity of deciduous trees gives a peculiarly smiling, cheerful, summer aspect to the entire district, with its hills, ridges, and valleys, even in mid-winter. In no part of Italy that I have visited have I observed the universal winter verdure here witnessed. We meet with it in our own forests of Scotch or spruce firs, but then the winter sky is generally sombre, filled with masses of lead-coloured clouds, and the sun is obscured. At Mentone, on the contrary, the sun mostly shines, and generally throws a greater glow on the landscape in January than it does on our evergreen forests in July. The verdure at first appears rather sombre, as it is principally formed by the olive woods, the orange and lemon-trees generally hiding in the valleys, but the eye gradually gets accustomed to the hue. In the eastern bay, on the hill-side, however, as we have seen, there is quite a grove of light-green lemon-trees.

Owing to the absence of frost, many of our English garden flowers, which are cut down by the first frosty night, continue to flourish and bloom all the winter through. This is the case, for instance, with the geranium, the heliotrope, the verbena, the nasturtium, and some kinds of hardy roses, which continue to flower throughout the winter in many gardens. The nasturtium, an annual with us, becomes a perennial ligneous shrub, as in Peru, its native country. There are also many flowers peculiar to the South which bloom throughout the winter. Violets appear about the middle of December in the warmest spots. By the end of January they have become a weed, flowering from every wall and in every torrent-bed that the sun reaches. The delicate lycopodium of our hothouses and conservatories replaces or accompanies the mosses of our climate, growing freely in all damp places. Anemones begin to blossom early in January, and are rapidly succeeded by daffodils, narcissuses, hyacinths, tulips, gladiolas, hepaticas, and primroses. They are found wild, but only in certain regions known to "the initiated" and to some of the donkey women. The white alyssum, which we use for garden edgings, is very common; so is a large species of daisy.

There is a friend of our childhood, the common

blackberry, which we are glad to welcome even at Mentone. In the warmest, wildest, and rockiest regions it grows as vigorously, as joyously, as in any quiet lane in England or Scotland; only, in such situations it becomes an evergreen—in this sense, that it does not lose one set of leaves until it has got another. It is, in truth, a singularly hardy plant, with a most singular power of adapting itself to circumstances. All climates seem to agree equally well with it—hot or cold, rainy or dry, maritime or inland, plain or mountain. I have never been to a spot in Europe where I have not found it, from Sutherlandshire to Mentone. I must, however, confess to a certain degree of surprise when I saw this favourite of our shady English lanes growing at Mentone with wild and determined luxuriance, filling up the bed of dry torrents, climbing up trees to a height of twenty or thirty feet, and choking passages between lemon terraces on the mountain-side; and that in regions where it often does not rain in summer for six months together, and under the glare of the fierce Mediterranean sun. Certainly it must have a mission to fulfil. Its sight is always welcome, as is all that reminds the sojourner in foreign lands of his native country and of the haunts and pleasures of his early days.

The vegetation of course varies according to the nature of the soil. Some of the lower hills are of sandstone, which impresses on the flora its peculiar character. The trees are pines, the shrubs, the arbutus, the myrtle, the juniper, prickly brooms, mountain lavender, heaths, &c. At Christmas, our common ling heath is in full flower. Another very beautiful heath—the Mediterranean or herbaceous heath—flowers in February and March. It has an erect stem, which rises to the height of five or six feet, and its spikes of numerous white flowers are very lovely. A species of evergreen, creeping smilax, or sarsaparilla, with variegated triangular leaves and groups of red berries, is very common. Our old friend the ground-ivy is also constantly met with in the valleys and watercourses.

Ferns are very numerous in this district, and their growth is favoured by the peculiar structure of the terraces. The walls by which these terraces are bounded are formed by the simple superstructure of large stones, and the earth gradually filtrating into their interstices, forms a cool, damp bed, admirably adapted to their growth. All the old terraces are clothed with the ceterach fern, the asplenium trichomanes, and the asplenium adianthum nigrum, which, with the capillus veneris or maiden-

hair fern, are the most common. The latter is a mere weed, and waves its beautiful fronds near every tank, every brook, every small irrigation canal—indeed, wherever there is either running or stagnant water. The pteris aquilina, or brake fern, is common, but it is a summer fern, as with us, its fronds only appearing in April, when the invalids are preparing to migrate northwards. The scolopendrium, the polypodium vulgare, the ruta muraria, several species of woodsia, and the cheilanthus odorans, are less universally distributed, although by no means uncommon. On the whole, I found twelve different species of ferns, most of which are also met with in England. I was rather surprised in the summer that followed my first winter at Mentone, to find the asplenium trichomanes growing with equal luxuriance on the ruins of an old chapel in a solitary islet at the northern extremity of wild and beautiful Loch Awe, in the far north, on the west coast of Scotland.

All the cultivated vegetation of the Mentone amphitheatre—lemon-trees, olive-trees, &c.—except what grows on the narrow seaboard, is on terraces, and has been the product of the labours of countless ages. The mountains and hills rise too rapidly from the sea level for even olive-trees to grow

without this preliminary step being adopted to support and form the soil. A terrace is a ledge cut in the hill-side. The stone taken out of the hill forms the outer wall, the dust and broken stones the soil. These terraces are very expensive to make,—as much so, I have been told, as houses, whereas the product is prospective only. The man who builds them sinks his capital for his children's benefit, not his own. If he plants lemon-trees, he must also dig a large tank, and be able to get water to fill the tank, in order to irrigate them in the rainless summer. If he plants olive-trees, they grow so slowly, that in twenty years even the produce is insignificant. On the other hand, the stones have to crumble into soil, under the influence of moisture, wind, and weather, and manure has to be added, before the terrace can produce the green crops, which are generally planted on those occupied by young trees. And yet the mountain-sides are scarred with these terraces, which rise in successive tiers, and are the foundation of the agricultural riches of the country. They are the evidence, in stone, of the thrift and industry of past generations—a silent but eloquent monument of the domestic virtues of the forefathers of the present race.

Geology.—The geological features of the country

are very interesting, and much may be observed in a small compass. The high range of mountains which form the amphitheatre are of secondary Oolitic or Jurassic unstratified limestone. At both the eastern and western extremities of the Mentone bay this formation juts out into the sea. At the eastern extremity, the road to Genoa is cut out of the side of the mountain, and ascends to a great elevation, crossing a deep ravine by a bold bridge, the Pont St. Louis. A short distance on each side of this point are observed the strata which replace the chalk formation in Italy. Then commences the tertiary system by a well-developed nummulitic limestone, full of nummulites, which is followed by other representatives of the miocene, pliocene, and pleistocene groups. These strata are observed on both sides of the Pont St. Louis, in the same order, eastwards towards Ventimiglia, and westward to Roccabruna, at the base of the Turbith ascent. At both these points appear the pleistocene boulder drift. Thus the lower hills, which occupy the ground, as it were, of the Mentone amphitheatre, represent from east to west the different strata between the secondary Jurassic oolite and the post-tertiary boulder drift.

The water which falls on the higher mountains, in finding its way to the sea, has worked deep ra-

vines, which expose the structure of the tertiary rocks, and formed numerous narrow valleys, by which access is obtained to the higher mountains, and to three or four small picturesque towns or villages therein built. These ravines form, as we shall see, an important feature in the sanitary history of Mentone. Owing to the backbone of the district, as it were, being limestone, the water is everywhere very hard, and the springs considered the purest are loaded with lime. Treated with oxalic acid, the water gives a most abundant precipitate, even when taken from springs in the sandstone rocks. I have had to meet this difficulty by giving distilled water or rain water to some patients. In others the hardness of the water is evidently beneficial, as, for instance, in cases of chronic diarrhœa.

In the unstratified limestone rocks at the Pont St. Louis are many caverns, similar to those which so frequently occur in limestone rocks in general. They are probably owing to the dissolving action of water on the soluble limestone rock, to the infiltrations of subterranean springs or of rivers in days gone by; as are those on a larger scale which exist in the limestone formations of Derbyshire, Styria, and Kentucky.

On the shore at the eastern extremity of the

inner bay, in the "red rocks," as they are called, are two good-sized caves, which contain in great abundance organic remains, the bones of large and small mammifers, imbedded in hard sand and calcareous matter. These organic remains thus imbedded, cover the floor to a depth of many feet. Their nature and extent have not yet been cleared up; at least, the result of the researches made by passing travellers has not, to my knowledge, been made known. I have myself recognised the bones of large and small carnivoræ, graminivoræ, and rodentia, and feel certain that a minute investigation of the contents of these caves, by a competent inquirer, would be attended with interesting results.

There is an amusing tradition among the inhabitants of Mentone, that many years ago a "mad Frenchman," who passed several winters at Mentone for the health of his wife, whom he eventually lost, spent his whole time in excavating these caverns. Some, indeed, go so far as to impute their entire formation to his insane efforts. No doubt the French stranger was merely an enthusiastic geologist, who had discovered the "bone drift," and worked at it with due energy. The traces of his labours, or of those of others, are still found at the entrance of the larger cave. No clear idea of the natural

sciences has penetrated as yet among the peasantry at Mentone. When botanizing, I have been often good-humouredly asked if I was looking for a salad, and told that the herbs I had collected were not good to eat, whereas such and such others were.

As I have stated, several of the lower or tertiary hills enclosed in the amphitheatre are formed of a loose sandstone. With this exception the soil may be said to be principally of limestone formation, with here and there aluminous clays. The agricultural geology of the district is consequently exceedingly interesting, offering much to observe in a very limited area. The clay strata, in their natural unworked state, appear, as elsewhere in Italy, very sterile. The sides of the deep ravines worn in them by mountain torrents present very little natural vegetation; as may be seen in the upper part of the Gorbio valley, and to the east of the mountain village of Castellare. Where, however, the fall is not precipitous, and especially where terraces have been formed, and the soil has been worked and manured, the clay strata appear to become very productive. This is easily explained, as clays contain the potash and other salts necessary for vegetation, and everywhere merely require cultivation and irrigation to become fertile.

The sandstone hills are more naturally fertile than the clays to their own peculiar vegetation above described, but do not offer the same resources to cultivation. The soil being principally silicious, and containing in very small proportion the salts and mineral constituents required for cereals and the vegetation of good land, it does not appear to become so easily fertile under cultivation. Still, with the help of terraces, irrigation, and manuring, it seems to respond to the wants of the evergreen, olive, lemon, and orange-trees.

The hard unstratified limestone which constitutes the Mentonian basin, and of which the higher range of hills is mainly if not entirely composed, by its decomposition forms a very fertile soil. Indeed, the gradual disintegration of this hard marble-like rock admirably illustrates the formation of soils in the early period of the earth's creation. Like limestones in general it contains, locked up in its all but adamantine structure, most of the mineral elements necessary for vegetation, including iron. The presence of iron is at once apparent from the red hue of the more perpendicular rocks. When a fracture occurs, the fracture is at first white, but from exposure to the air the iron passes to the state of the red peroxide, in which state it is well known to

greatly increase the fertility of soils. Thence the red hue of the rocks which bound the inner bay near the Pont St. Louis, and of the soil generally formed by the detritus of these rocks.

At the foot and on the sides of the limestone rocks are vast masses of stones and detritus that have fallen from the cliffs adjoining, broken off by the combined action of moisture, sun, and wind. These gradually crumble where they lie, yielding up their mineral constituents, and forming a suitable nidus for seeds sown either by the hand of Nature or by that of man. If the lemon or olive is planted, it grows at once vigorously and healthily. If vegetables and cereals are sown, they appear to be equally at home. The numerous terraces recently constructed on the side of the mountain, and at the foot of the cliffs near St. Louis, and the self-sown plants growing naturally in the same region, illustrate these facts. Thus, no doubt, was the soil of the habitable globe formed when its mountains first reared their heads above the waves.

Meteorology.—As is the case in the South, the rain generally falls in great quantities in a limited space of time, filling the torrents with enormous volumes of water, which carry great masses of stone with them from the mountains, and form wide

beds as they near the coast. These watercourses are, at other times, as in Central and Southern Italy, mere rivers of stones, with a thin stream of water trickling through the middle. On one night in December, 1859, 4½ inches fell in ten hours. The greatest amount of rain that was known to have fallen in twenty-four hours at Greenwich in five years was 2·63 in.—(Drew). The total rain-fall during the winter of 1859-60 at Mentone was 23·68 in., from October 9th to April 21st: October, 8·02 in.; November, 2·21 in.; December, 6·96 in.; January, 3·24 in.; February, ·18 in.; March, 1·26 in.; April, 1·81 in. These data were given me by a friend, Mr. Smith, of Rome, who kept an accurate register. According to my own observations, it rained in that winter, in November five days, in December five, in January four, in February one, in March six, and in April, up to the 23rd, eight days; in all, twenty-nine days, from November 3rd until April 23rd. In October I was told it rained nearly every day.

I constantly saw it raining on the hills, or a few miles out at sea, when it was quite clear and fine at Mentone. In the former case, the wind was generally a southern wind, and as it ascended the mountain it evidently met with colder strata of air which precipitated its moisture. I have repeatedly

sat on the mountain-side and watched a current of warm air rise from the sea at a distance, form at first a vapour, and then a white cloud, gradually ascending the mountain. It is singular to see the small vapour cloud spring, as it were, from the waves near the shore, and gradually expand and enlarge as it creeps up the mountain-side. I was, indeed, forcibly reminded of the fisherman in the Arabian tale, who opens a casket on the seashore, from whence the geni issues in the form of a thin vapour, which rapidly becomes a cloud covering the horizon. The rain that fell under these circumstances was often confined to the upper hills, and increased the volume of torrents and rivulets, although it was quite fine on the shore.

When, on the contrary, it rained a few miles out at sea, whilst we had fine dry weather at Mentone, the wind came generally from the contrary direction, from the North. The cold north wind passing over our heads, impinged upon the sea some distance from the shore, meeting warmer atmospheric strata. Dark banks of clouds would thus form, and rain would fall several miles from the coast. In either case the coast ledge enjoyed a happy immunity.

The average fall of rain at Nice is 25 inches. I presume that the annual fall at Mentone is as great,

or indeed greater, from its being hemmed in by mountains on nearly all sides but one. According to Roubandi, the author of a valuable work on the climate of Nice, the average number of rainy days at Nice is sixty. M. de Brea, a native and resident of Mentone, and a gentleman of high scientific attainments, has recently published a meteorological table, founded on ten years' observation, from 1851 to 1861. According to his observation, the average number of days or nights during which it rained little or much at Mentone is 80, or 20 more than at Nice. We may presume, therefore, that the fall of rain is also greater, although the consequence is not necessary. At Greenwich, the average rainfall is only 25 inches, yet the number of rainy days is 155. At Torquay, the average number of rainy days is also 155. At Pau, the average rainfall is 43 inches, rainy days, 119. At Malaga, the number of rainy days is only 40 (Francis). At Madeira, the rainfall is variable, the average about 30 inches, the rainy days 88 (Dr. White).

The amount of rain that falls does not so much characterize the climate of a locality as the manner in which it falls. At Mentone, as at Nice, and along the entire Riviera, thoroughly cloudy days and days of incessant rain are rare. They do, however, occur

occasionally in the winter. The sky will be obscured, so that the sun is not seen, and rain will fall for several days and nights. But this does not usually take place more than two, three, or four times in the course of the winter. Many inches of rain fall on these occasions, thoroughly soaking the ground. Then, after two or three days, the clouds disperse, the sun peers forth, and again careers through a clear blue sky, like a blazing fire. In a few hours, the ground becomes dry, and many days of uninterrupted sunshine follow, during which out-door life goes on as during a fine, rainless October with us.

During the two winters that I have passed at Mentone, living in the inner or eastern bay, I have never seen a fog, day or night, morning or evening. Generally speaking, the sky has been clear, and the sun shining in the heavens like a globe of fire. During the first winter, there were seldom any clouds in the sky, except during the rainy days above described. In the second, the wind was oftener in a southern quarter, and the days when the sky was partially covered, without rain, were more numerous. But even on these days the sun was always seen and its power felt. So powerful are its rays, generally, that even in December or January, it is disagreeable

to walk in it without a lined parasol, as at Nice. The use of these parasols is by no means confined to the ladies, few gentlemen braving the sun without. They are a positive want, and those who object to them at first are sure to give in before long.

Sunshine is quite different in England and in the south of Europe. In our climate, the air, even in summer, is filled with watery vapour, which gives a whitish hue to the sky in July or August, and mitigates the effect of the sun's rays. In the South and at Mentone it is quite different. In fine weather, winter or summer, the sky is of a hard blue, and objects at a distance of many miles are seen clearly and distinctly, without any of that haze which forms so peculiar a feature in an English landscape. Immediately behind the house where I resided, rises a mountain, the Berceau, the two peaks of which are 3850 feet high. They were generally, throughout the winter, perfectly free from clouds, and seemed so near that nothing but absolute barometrical measurement convinced me and others of the real height. I should have thought it about 2500 at the utmost.

Owing to the great power of the sun, the freedom from fog, the slight amount of rain, and the dry, rocky character of the soil, the air is usually very

dry. So much is this the case, that wet or damp linen dries in the open air, out of the sun, in a very short time, at any period of the winter, except when it rains, or when the sky is obscured. In January of this year (1861) I sat out of doors reading for two hours every afternoon, from the 3rd of January until the end of the month. I merely chose a spot sheltered from the wind, at the foot of an olive-tree, and exposed to the sun, from which I was, however, always obliged to screen myself by the lined parasol. Without this precaution the position would have been quite untenable. A thermometer in the shade near me marked from 59° to 62°. At my feet, and around me, were always many insects, attracted by masses of wild thyme in full bloom.

According to M. de Brea's statistics, omitting the fractions, the annual number of fine days in which the sun shines without clouds is 214; the number of days in which the sun shines with clouds is 45; and the number of days in which the sun is not seen, the sky being completely obscured, without rain, is 24. To which we may add days of rain, 80, many in part sunshiny.

And yet it was decidedly winter at Mentone. The nights were chilly, the thermometer generally

falling to between 40° and 48° in fine weather, and in bad weather sometimes below 40°, during four months —December, January, February, and March. In the daytime it was generally cold in the shade and when the sun was obscured by clouds. The ordinary "shade maximum" varied from 50° to 56° when the sun shone, and was lower still when it did not. It always became cold as soon as the sun went down. The heat was evidently sun heat. In a south room, whenever the sun was on the room, the window could be left wide open; and, without a fire, the thermometer generally remained at 62°, or thereabouts. As soon as the sun disappeared, however, the window had to be shut, and a good fire lighted. In midday, also, the north rooms on the same floor, during these months, were generally four, six, or eight degrees colder than the south. Again, immediately after the sun disappeared behind the mountains, there was generally a difference of six or eight degrees in the temperature of the atmosphere; and whenever the sun was permanently obscured by clouds, it became chilly and cold, and the complaints against the climate were loud and numerous.

The vegetation showed the influence of a powerful sun warming a chilly atmosphere. The deciduous trees lost their leaves in December, as soon as the

nights became cold, and did not regain them until April, when they were becoming warmer. The green forest-clad appearance of the hills and valleys in midwinter was owing entirely to the evergreen, olive, orange, and lemon-trees. The few deciduous trees were mere dry sticks until April. On the other hand, in sheltered situations exposed to the south, the heat of the sun during the day so warmed the soil, that it had not time to cool at night, and such situations became regular forcing-beds, producing, as I have stated, violets in December, anemones in January, and all our spring flowers early in February. Where the sun did not penetrate, on the other hand, the ground-vegetation remained torpid, like the deciduous trees, till March. As, however, the sun-exposed localities were very numerous on the sheltered lower hills and in protected valleys away from the sea, the ground-vegetation early became very luxuriant and abundant, offering great resources to the botanist and florist. Indeed, in the warmer valleys the only winter was the thoroughly rainy days.

From what precedes, it will be perceived that the characteristics of the climate of Mentone, as evidenced during the two last winters—unusually severe ones—are the following: the absence of frost; the

absence of fogs; the paucity of rainy days; the clearness of the sky; the heat and brilliancy of the sun when it does not rain; a rather cool or chilly night-temperature; a bracing coolness of the atmosphere throughout the winter out of the sun's rays. When, on the contrary, the sun is obscured by clouds, and rain falls, there is as miserable and chilly a state of things as in a drizzling November day in England. As, however, rain only falls on a small number of days, and then often not during the whole day, and as the other days are uniformly bright, clear, and sunshiny, five days out of six, throughout the winter, exercise in the open air can be prudently taken, with both satisfaction and benefit, from ten until four or five.

Notwithstanding the complete protection from the north, and north-west or mistral, the wind is often rather high. It generally seems to come from the south-east or south-west, the open quarters, probably owing in part to the land-locked character of the district; but even when it is present, the mountain valleys and the more internal hills are quite sheltered and protected. There certainly is anything but the atmospheric stagnation which has been mentioned as peculiar to Mentone. The second or eastern bay is decidedly better protected from wind,

and appears to be a couple of degrees warmer also, than the western, owing to the mountain rising immediately behind the houses which line the shore.

The southerly winds to which Mentone is thus exposed are, however, of a much less unpleasant character than the north, and especially than the odious mistral, which it escapes. Even the south-east, or sirocco, the plague of southern Italy, all but loses its pernicious character by the time it reaches the head of the Gulf of Genoa. In addition to these winds, I must mention, that whenever it is very fine, and the sun shines with force on the Mentonian amphitheatre, there is a very decided sea-breeze during the middle of the day, as in tropical countries. The air becoming heated and rarefied in the mountain basin, rises, and cooler air from the sea rushes in to supply its place. In winter, this sea-breeze reigns from about twelve to three. In summer it begins much earlier—at eight. Thus the seashore of Mentone is decidedly windy, especially in early spring, but the wind is usually gentle and soft, and can be completely avoided by leaving the shore and gaining the numerous valleys. We must recollect also that wind is a health-giving agent, a purifier of the earth, and that a place where there is no wind would soon become pestilential in a southern climate. It is only objectionable for the very ill.

The climate of Mentone is a favourable specimen of what botanists call the warmer temperate zone. Plants live which frost kills; many annuals in a colder region become perennials; and many forms of vegetation new to the more northern flora make their appearance. It is the Mediterranean climate, but that of the more favoured Mediterranean regions. In Italy, for instance, the most protected southern parts must be reached to find the same immunity from frost. Mentone, also, is a little warmer, and more protected from wind, than its neighbour, Nice, and much more so than Cannes, although the general features of the climates must be the same, for they are only a few miles apart. It is the question of fruit walls in the same orchard, one a little more sheltered and protected than the others, but all being turned towards the South. At Nice, however, there are sheltered situations, such as the Cimiez and the Carabacel, in which the protection is greater than in the town itself, and which thus assimilate to Mentone.

It is well to recollect that in such a climate, in the warmer temperate zone, winter is not by any means avoided. The descriptions of the winter climate of Nice, Cannes, Hyères, and Italy in general, contained in most books of travel, works on climate,

guide-books, &c., are mere poetical delusions. The perpetual spring, the eternal summer, the warm southern balmy atmosphere, described to the reader in such glowing terms, only exist in the imaginations of the writers. Although there is so much sunshine, so much fine weather, such immunity from fog and drizzling rain, it is still winter. Wind, rain, a chilly atmosphere, and occasional cold weather have to be encountered, and it is as well that the invalid traveller should be prepared to encounter them. Otherwise, anticipating an Eldorado, balmy zephyrs, perpetual sunshine, and an ever-smiling nature, he is disappointed. I believe that continuous warm weather in winter is not to be met with in the temperate zone, only in tropical or sub-tropical regions. If it is required, therefore, the tropics, or at least Madeira, should be selected.

The existence of orange and lemon-trees, of geraniums, heliotropes, verbenas, and roses, flowering throughout the winter, do not necessarily imply the absence of cold weather, merely the absence of absolute frost. This is well known to all who are familiar with the management of conservatories and of winter flower gardens in England. Once the flowers, gathered from every clime, which make an English conservatory such a scene of glory in winter, are

fully in blossom, and have been brought in from the forcing-houses, all gardeners know that a rather low temperature is beneficial, and prolongs the bloom and beauty of their floral favourites. The Chinese primulas, the heaths, the epacrises, the camelias, the azaleas, &c., continue to expand and thrive at a night temperature of from 38° to 44°. It is the frost they fear.

A few miles from Mentone, at Bordighera, groves of palm-trees grow in great luxuriance, and are looked upon by all travellers as evidences of an Eastern climate, as are those that grow on the "Place" at Hyères, and in private gardens at Nice. Such, however, is not the case. Palms will grow as out-door trees at any part of the Riviera, and would be generally cultivated, were it not that their cultivation is unprofitable everywhere except at Bordighera, which has the monopoly of supplying Rome with palms on Palm Sunday. But they either do not produce fruit, or their fruit is not fit to eat. To ripen the fruit of the date palm the sultry heat of the deserts of Egypt or of the Sahara is required. This tree may be compared, when growing in southern Europe, to the chestnut-tree in the north of England. As a tree, the latter grows with us in great luxuriance, but its fruit is

all but worthless. The centre and the south of Europe alone have sufficient summer warmth to allow the fruit to reach perfection. The presence of magnificent chestnut-trees in our climate does not, therefore, indicate that it is a warm climate.

The proximity of the sea exercises a considerable influence over the climate of Mentone, as the temperature of the Mediterranean is never very low. When the weather is cold, and especially when the sun is obscured, the sea is a reservoir of heat, and perceptibly warms the air; for it is then warmer on the sea level than on the hills. When, on the contrary, as is usually the case, the sun shines, the evaporation which constantly takes place cools the air at the sea level, and it becomes perceptibly warmer as the hills are ascended. Indeed, there are sheltered sunny nooks in the vicinity of Castellare, a mountain village 1500 feet above the sea level, where violets and anemones appear at least ten days before they are found elsewhere.

The summer climate of Mentone is said by the residents to be cool and pleasant, owing to the sea-breeze which sets in regularly, as I have stated, in the morning, and blows the greater part of the day. This statement must, however, be taken with some little allowance. In the tropics, on the sea-coast,

there is this sea-breeze daily, which makes the warm weather bearable, even agreeable to some; but still it does not prevent the temperature being very high. Warmth, when the air is stagnant, is very difficult to bear, because the insensible respiration collects on the skin and is not carried off. When, on the contrary, there is a light breeze fanning the body, the perspiration is constantly carried away, and the body cooled by its vaporization. A trying feature of the summer heat in this district is that the nights are not much cooler than the days, so that a high temperature has to be borne constantly night and day for several months.

Such being the case, I do not advise invalids to remain at Mentone during the summer season. If they do not wish to return to England, the best summer climate in Europe for health, they had better seek a refuge from the heat in some of the high mountain sanatoria to which the medical men of the country send their patients. I may mention, as easily accessible, the Grande Chartreuse, near Coni, and further away, the Grand Cormoyeur, a well-sheltered and picturesque mountain valley, with sulphur springs, near Aosta, on the south side of the Mount St. Bernard.

In Switzerland there are many retreats of this kind

at variable grades of elevation. Amongst the pleasantest and best, according to my friend Dr. Bezancanet, of Aigle, are, the Baths of Morgins, in the Valais, above 4000 feet high, a charming mountain valley, well known for its strong chalybeate spring; Sepey or Ormonds, about seven leagues from Vevay, 3300 feet high; La Rossinière, a pretty mountain village, with a good hotel; Aigle, Bex, and Clarens. The three latter are only 800 feet above the level of the lake of Genoa, but the lake itself is 1200 feet above the sea level, so that the elevation is still considerable. In early summer and in the autumn they are better calculated for the invalid than the higher elevations, which are only suited for invalids during the great summer heats—from the middle of July to the end of August and the middle of September. At all these places there are comfortable Pensions at very reasonable rates.

In cases of phthisis more especially, extreme heat should be avoided during the summer, as calculated to accelerate the progress of the disease by softening tubercular deposits and debilitating the general health. The patient should be kept in a temperature below 70° Fah. This, in Continental Europe, can only be done by leaving the plains for the mountains and

attaining thereon a considerable elevation—at least three or four thousand feet.

The ordinary notion of the Mediterranean is that of a blue and tranquil ocean lake. At Mentone during the winter this poetical view of the great inland sea is strangely falsified. Indeed, it is all but constantly angry, and quite realizes the experience of "pious Æneas" in days gone by, for it is a troubled and perfidious sea, generally breaking in angry billows on the shingly beach. To those who are familiarized with the varying forms of our old ocean, ever advancing, ever retreating, this seething, tideless sea, which day and night beats the shore with impotent rage, never advancing, never retreating, is at first tedious in the extreme. Gradually, however, the eye, the ear, the mind, become accustomed to its monotonous anger, and then open to its real magnificence. It is, indeed, a glorious privilege to live, as nearly all do at Mentone, in front of the boundless liquid Mediterranean plain, at one time heaving restlessly, at another in a calmer mood, covered with myriads of facets on which the sparkling sunshine dances and glitters. The daily rising of the sun, also, in the East, out of the waters, colouring the skies and the waves with hues which surpass those of the rainbow, is a magnificent sight, which never palls.

When the sea is breaking furiously on the beach, as it does during the greater part of the winter, there is but little marine life visible. The sea level being ever the same, owing to the absence of tides, there are no exploring walks on the sands at low tide, as on our own coasts, no searching after zoophytes and fuci. On calm days, however, a walk to the extreme end of the Cap Martin introduces the amateur naturalist to pools lying between jagged rocks, where there is much to be observed. There are also other points along the Eastern coast where similar pools may be found containing marine treasures; only to be examined, however, on days of perfect calm.

The depth of the Mediterranean is very great on this coast near the shore. According to Lyell, Saussure found a depth of two thousand feet a few yards from the land at Nice, and from Toulon to Genoa the sea is everywhere very deep quite near the shore. This is always the case in the Mediterranean where mountains terminate abruptly in or near the sea, as they do along the Riviera. The abysses of the sea are probably at least as deep as the mountains in their vicinity are high; and as at Mentone the mountain range reaches the sea line, there are, no doubt, alpine

valleys many thousand feet deep within gunshot of the shore;—a grand idea.

Thus is explained the absence of deltas at the mouths of the large torrents which descend from the mountains and fall into the sea in the Mentonian amphitheatre. For countless ages these torrents have been rolling, during the winter rains, great masses of boulders into the sea, and yet no impression has been produced on the outline of the two bays, which remains perfect. No doubt these boulders, which form in places a shingly beach, are soon rolled into these all but unfathomable depths, just as stones rolled down a housetop would fall into the space below. The same remark applies to the Paillon torrent at Nice. Thus, at the bottom of these marine valleys are now forming, no doubt, beds of conglomerate, similar in character to the one on which the village of Roccabruna is perched.

The Mediterranean is a warm sea. At all times of the year it is five or six degrees warmer than the Atlantic Ocean under the same latitude; and in winter it is never cooled down to the same extent that the latter is in northern and even temperate regions. In the open oceans there are, deep below the surface, cold currents from the North and South Pole, which have been revealed by the deep-

sea soundings of Captain Maury and others. Thus, in the Atlantic Ocean,—at the bottom of the gulf stream, a temperature of only 35° Fah. has been found, whilst the surface was above 80°. The Mediterranean, a land-enclosed sea, is not accessible to these Polar currents, which is one of the causes, no doubt, of its exceptional warmth.

This exceptional warmth of the Mediterranean exercises, as we have seen, an influence on the climate, which it modifies favourably. It also exercises a remarkable influence on the finny tribes that inhabit it.

As Captain Maury first noticed, the cold oceans and seas are those in which fish, especially good edible fish, thrive the most and are the most prolific. The cod, the mackerel, the herring, the sole, the salmon, all belong to northern latitudes. Fish are abundant and good on the north coast of America, east and west, and on the north coast of Europe. In the tropics and in warmer seas, on the contrary, they are neither so good nor so numerous, although more brilliant and fantastic in colour and shape. The Mediterranean is no exception to this rule, as I can testify from personal experience. The fish it contains is in general neither good nor abundant, which accounts for the

Roman Catholic inhabitants of its shores consuming so large a quantity of the product of the herring and cod fisheries of Northern Europe.

On a fine day, when the sea is calm, the Mentone fishermen are on the alert betimes, and the bay is studded with boats. A very close-meshed bag net is thrown out and buoyed, and then dragged in shore by long ropes, with great excitement on the part of those engaged. There are often ten or twelve men, women, and children to each net. When at last, however, it is drawn in, and its contents are scattered on the beach, these efforts recal the fable of the mountain in labour. There is seldom anything in the bag but a few pounds' weight of a minute transparent whitebait-looking fish, a few sardines and small red mullets, some diminutive sword-fish fry, and two or three crabs, the size of a five-shilling piece, that have not been able to get out of the way. These small-meshed nets must, however, be very destructive to young fish; and as they are everywhere used on the Mediterranean coast, they must tend to render it even more unproductive than nature intended it to be.

All who sail on or live near the Mediterranean notice the peculiar blueness of its waters. This tinge would seem to imply that they contain more

salt than the waters of the ocean. The more salt held in solution by water, the bluer it is; the less salt, the greener it is. Thence the light green hue of the Polar seas, which contain much more fresh water than those of the tropics. The latter are generally, from this cause, of a deep indigo, like the Mediterranean. The evaporation from the surface of the Mediterranean probably abstracts a much greater quantity of water than its rivers supply. Thence the strong current that sets in from the ocean at Gibraltar; and also, no doubt, the blue tinge of its saline waters.

In describing the natural features of the Mentonian amphitheatre, I must not omit to mention that its olive and pine woods are alive with feathered songsters. The notes of some are very musical, and those of others reproduce sounds familiarly heard in the summer in our own pine forests in England. They are probably winter emigrants like ourselves, in search of a southern sun. The olives and pine cones afford them abundant food. On the sea, near the shore, are often seen troops of sea-gulls, especially when wind and storm are looming on the horizon.

CHAPTER III.

MENTONE IN ITS MEDICAL AND SOCIAL ASPECT.

During the two winters I passed at Mentone, the foreign population numbered about three hundred, and contained representatives of nearly all the European nations. The French and English were, however, the most numerous, each family generally containing one invalid. Most of the latter were suffering from pulmonary consumption.

The results of their winter's residence were such as might be expected from the above details. Those who were in the early or even secondary stages of the disease, and had vitality and constitutional stamina left, mostly did well. I saw in several young females well-marked, crude tubercular deposits disappear, gradually absorbed. In several cases of accidental phthisis in middle-aged, over-worked men, the amelioration was still more apparent. Well-marked cavities became partly or entirely cicatrized, and the constitutional symptoms gradually subsided, the

general health and strength steadily improving. Those who were in the later stages of the disease, on the contrary, generally speaking, appeared to derive but little benefit from the change. The malady seemed to progress slowly, but steadily. They suffered from the cold and the wind, and especially from the occasional outbreaks of wet, chilly weather. Moreover, some felt bitterly the absence of home comforts, and their separation from friends. Several dropped off in the course of the winter, as they would have done at home, from hemorrhage, from pleurisy, from bronchitis, or diarrhœa. In their case, it appeared to me that little was gained by the change of climate. They could not avail themselves of its bracing capabilities for out-door life and enjoyment, and felt the variations, against which they could not protect themselves as well as at home. Such patients, in the last stage of phthisis, emaciated, unequal to any exertion, evidently arrived at the concluding stage of their earthly pilgrimage, are, in my opinion, better at home, or in a warmer climate than that of Mentone, or of Italy generally—Madeira, for instance, where the temperature is said never to fall below 56°.

I would also include in this category those phthisical sufferers in whom the disease is rapidly

passing through its stages at home, especially if the disease is of an hereditary character. Change of climate can scarcely be expected in such cases to arrest the progress of a malady which is running through its phases with the rapidity of an acute disease. In some few instances, however, of advanced phthisis, although very ill, the invalids, surrounded by dear friends, were so charmed with the sunshine, with the foreign scenery, with the vegetation, with the mountains, and with the sea, that it compensated for all their fatigues and trials, and that they rejoiced in their presence at Mentone, even in the midst of great suffering. Nor could I or those around regret the fatigue encountered in the journey from England.

The most satisfactory cases that I witnessed were those in which climate was not alone relied on, in which the patient was under constant and judicious medical management, in which the routine of daily life was guided by medical experience, and in which the various therapeutical resources that our improved knowledge of phthisis gives the profession were steadily persevered in. Patients left to themselves, or to rules laid down for their guidance at home, commit all kinds of errors. They constantly omit to do what they ought to do, and, carried away by the

example of others, or by the first dawn of improvement, do much that they ought not to do.

Persons suffering from pulmonary consumption should also be cautioned against trusting to the follies and delusions of homœopathy and of other modern fallacies. They should ever remember that they are labouring under a disease, curable in some cases, but usually fatal; from a disease that is still, with all our improvements in medicine, a verdict of death to a large proportion of those whom it attacks. Is it not, therefore, tempting Providence, throwing life away, abandoning the last chance of recovery, to discard the experience of ages, and to entrust life to the unknown professors of doctrines which every master-mind in Europe engaged in the study and practice of the medical profession pronounces insane delusions, to say the least?

Several persons who always suffered from bronchitis in England were quite free from it at Mentone, owing probably to the dryness of the atmosphere. This remark applies to other similar climates. I met an old friend at Nice, a London physician, aged fifty-four, who abandoned London five years ago, owing to repeated attacks of winter bronchitis, which at last led to very serious complications. He made a winter settlement at Nice,

and has there passed the cold season ever since, perfectly free from all bronchial mischief, and in flourishing health. In several cases of this description, the attempt to spend the winter in England was attended with a return of the bronchial affection with its usual severity. In one phthisical case that I saw, a gentleman aged forty-four, with softened tubercles, who had suffered from sore-throat and bronchitis for nearly four years in England, lost all cough and laryngeal irritation after three months' residence at Mentone, and had no return during that or the following winter.

It is easy to understand that a dry, bracing, cool, invigorating climate such as I have described should have a beneficial influence on the respiratory mucous membrane of the persons who have still some of the vital power of youth or some constitutional stamina left. When we add to this, all but daily exercise in the open air throughout the winter, in the midst of magnificent scenery, removal from the cares, anxieties, and duties of ordinary life, pleasant social intercourse with fellow-sufferers and their families, all tuned to the same unison of cheerful and hopeful resignation, we certainly have united all the hygienic influences calculated to renovate the general health, and thus to arrest the development of tubercular disease.

Indeed, to me it is a question whether a warmer and milder winter climate, which is only to be found in a tropical or sub-tropical region, is not less favourable to the recovery of health under such circumstances, always provided rigid attention be paid to the precautions necessary in a region where the temperature so constantly varies. Heat and moisture debilitate and relax the economy; moderate cold and a dry atmosphere invigorate and strengthen it: and, in the treatment of phthisis, the renovation of the general constitutional health is of primary importance.

In the first edition of his valuable work on Pulmonary Consumption,* Professor Bennett, of Edinburgh, drew the attention of the medical profession to the fact that persons labouring under tubercular disease of the lungs were generally worse in very warm summer weather than in dry cold winter weather, and my experience tends completely to corroborate his views.

When bronchitis, or the tendency to bronchitis, is accompanied by asthma, either spasmodic or emphysematous, the usual capriciousness of the disease is exemplified at Mentone as elsewhere.

* On Pulmonary Consumption, by Prof. Bennett. Second Edition. 1860. Edinburgh.

One of my friends, an eminent Swiss physician, aged fifty-six, who left home in nearly a dying state, from bronchitis accompanied by pulmonary congestion and asthma, rapidly recovered and passed a very comfortable winter, habitually free from thoracic suffering. Another, an English physician, aged thirty-six, was attacked with severe spasmodic asthma a few days after he came to our hotel, which is only a few yards from the sea, and had to leave abruptly. He soon got well at Nice, away from the sea, and spent the winter there in good health.

The latter gentleman suffered in England when he was near the sea; and I may remark, that nearly all persons who in England are ill when living in immediate proximity to the sea, appear to suffer at Mentone. Indeed, I should advise no such person to go there, for nearly all the houses for visitors are immediately on the sea-shore. To live at Mentone is really like living on shipboard, for, as already stated, the greater part of the inhabited district is a mere ledge at the foot of the mountains. There are very few houses inland. To chest cases in general this proximity is, I think, decidedly beneficial. Sea voyages are universally recommended in such cases, and salt, with some modern physicians, is lauded as

a panacea for phthisis. Moreover, the air coming from the sea must be pure and wholesome.

There is one class of disease that did not appear to me to benefit by the climate of Mentone—the neuralgic nervous class. I presume that the dry, keen, cool air of the north Mediterranean coast is in general too stimulating for such cases. In one, that of a lady (a former patient of my own), whom I had sent from England on account of agonizing tic which usually lasted all winter, and who had been free the first winter at Palermo and Naples, the tic returned with its usual violence at Mentone, and lasted several months; as it would have done in England. During a subsequent winter passed at Naples and Malta, this patient has again escaped. In several other less severe cases the neuralgic pains were roused by the cold days, and then long persisted, resisting treatment.

To those who, without having any particular ailment, are weak, ailing, dyspeptic, below par indeed, and who want invigorating and bracing, such a climate would be very valuable as a winter residence. To weak, sickly children the sunshine and out-door life would also be inestimable.

I have long remarked in England, that colds in the head, sore throats, attacks of bronchitis and

influenza, generally become prevalent when the weather is both cold and wet. Cold weather alone does not produce them epidemically, nor does damp. However wet and damp it may be in England, or in the midst of the rain and mists of the west coast of Scotland, as long as summer weather lasts, and the thermometer is at or above 60°, very few colds are met with. Let it, however, fall to 40°, 45°, or even 50°, and then damp or wet weather is immediately followed by the development of catarrhal disease on a large scale.

At Mentone the winter temperature is generally at this level, but the air is usually dry; and this is probably the reason these affections are rare. Whenever the weather is both cold and damp, they commence at Mentone, but die away as soon as the dry sunshine returns, even if the thermometer remains low. Those who enjoy the greatest immunity are those who keep their rooms cool and well ventilated night and day. Those who make large fires, who close their windows hermetically, and avoid every breath of air, are precisely those who suffer the most in this respect. I may instance the Germans and Swiss, who, accustomed at home to shut every crevice, and to treat the external air

as an enemy, generally follow the same plan even at Mentone, and suffer accordingly.

One of the most convincing proofs of the healthiness of Mentone is the general absence of severe accidental disease. During my two winters' residence I do not recollect having seen, amongst the foreign population, a single case of fever, malaria, dysentery, or indeed of any severe disease that could be attributed to external causes. The only diseases for which I and others were consulted were those that the invalids brought with them. This is the more remarkable when we consider that in many continental health towns, a considerable proportion of the foreign physicians' duties consists in their attendance on their countrymen for diseases of the above-mentioned nature.

To derive that benefit, however, from the climate of Mentone, and of the south of Europe generally, which it is capable of affording in thoracic disease, and especially in pulmonary consumption, the most rigid adherence should be paid to the hygienic rules peculiar to these regions during the winter season. It should never be forgotten that in winter the heat is sun-heat, and that the air, barring its influence, is usually cold. Warm clothes and woollen outer garments should be used. In dressing for out of doors,

a thermometer, placed *outside a north room*, should always be consulted. The hours for out-of-door exercise should be between ten and four, and the return should be so arranged as to secure the arrival at home before sunset. The Italian physicians appear to attach a mysterious noxious influence to the hour of sunset. In such a climate as that of Mentone and Nice, I am persuaded that the danger is in the sudden lowering of the temperature after sunset, which exposes to sudden chills, from the pores of the skin being often open at the time through previous exercise. As the same danger exists, even in midday, in passing accidentally from the sun to the shade, it is always necessary to be dressed for the latter. The invalid should inhabit a south room, and never go into a north room unless previously warmed by a fire. The one is summer, the other winter. When the weather is bad, he should make a good fire, and rigorously stay at home until it change. Sunshine and warmth are sure soon to reappear, and thus to bring the confinement to a close. After several days' chilly rain, as we have seen, sore-throats, colds, and rheumatic pains begin as in England, but then the sun again shines, and they usually die away. All dinner and evening parties should be strictly forbidden. The invalid must be in before

sunset, and not leave home again until the following morning. The improvement will be generally the more decided the closer these rules are observed. Lastly, exercise and out-door life must not be carried so far as to produce permanent lassitude. Several of the patients around me, and I myself, fell into this error—one easily committed, owing to the great attractions of out-door life, and the injunction generally made to take daily exercise, if possible.

Physical debility is a more ordinary accompaniment of phthisis than is generally supposed, and when it exists, much exercise is decidedly pernicious. In some cases, indeed, scarcely any exercise can be taken without impairing the digestion of food, and thus producing sleeplessness and extreme lassitude—a fact not generally known, and clearly a result of the organic cachexia connected with the disease.

With these precautions, the climate is safe and beneficial; without them, it is unsafe and treacherous. This is evidenced by the great mortality of the natives of the Nice and Mentone districts, and of Italy generally, by pneumonia and pleurisy, two of the commonest maladies. Being badly clothed, never making fires, and ignorantly braving these atmospheric changes, the lower orders are constantly exposed to chills, and succumb in great numbers to

these maladies, treated as they are by bleeding every few hours. Persons in the latter stages of phthisis more especially suffer from the slightest dereliction of the above rules, which they are not always the most careful to follow.

One great advantage of the dryness of the atmosphere, and of the absence of severe cold in the night is, that bedroom windows may be left slightly open, without risk of any kind, throughout the winter, and thus perfect night ventilation of the bedroom can be attained—a most important point for invalids, and especially for consumptive invalids, as demonstrated by Professor Hughes Bennett.

The resources of Mentone for visitors are all but entirely in the out-door life. The scenery, as I have stated, is most grand and imposing in the mountain background, and most picturesque and romantic in the nearer hills and coast outline. Every ravine, every valley is a path of great loveliness, ascending gently towards the higher range. The flora is very abundant, and, as we have seen, most of our garden spring flowers grow wild in great luxuriance. The geological aspects of the country are very instructive, and afford occupation and amusement to those interested in such pursuits. The great invalids mostly keep to the sea-

shore; those who are stronger, mounted on sure-footed donkeys, ascend the mountain paths as far as their strength permits; whilst the robust and valid members of the community try their pedestrian powers by ascending the higher mountains in various directions. Whenever the sun shines there are protected valleys and sunny mountain nooks, where at all times, in December or January, as well as earlier, warmth, a quiet atmosphere, and flowers are sure to be found. What with these occupations, books and papers interchanged, and the harmonious intercourse of countrymen united by the bond of common origin and suffering, the winter passes pleasantly along, merely saddened occasionally by the loss of one of the more hopeless sufferers.

Although the Mentonian amphitheatre is limited, as described, it is sufficiently extensive to offer all but endless excursions to visitors, ill or well, and more especially to the pedestrians. The protected valleys and hills are very numerous and within easy reach for the invalid population; once, also, the higher barrier of mountains has been passed, a perfect Switzerland opens out to the adventurous and valid tourist.

Within the immediate area of the Mentone

amphitheatre there are other points of interest besides the valleys and hills. The drive to Monaco, about seven miles along the coast, is most picturesque, and being sheltered and in the sun all the way, can be undertaken whenever the wind does not blow from the sea. Monaco itself is very interesting: a little town perched on a rocky peninsula all but surrounded by the sea. It is a calm and lovely scene on a fine sunny day.

The Cap Martin, a peninsula covered with an olive and pine forest, which forms one side of the first bay, offers also great attractions. Then the eastern road to Ventimiglia and Bordighera is very picturesque and pleasing, winding along the coast, often at a great height. I have been told by many that the scenery at Mentone is very like that of Madeira; only at Mentone there are several miles of level coast-road along the seashore, which at Madeira are wanting. The views are everywhere magnificent.

To get a thoroughly good idea of the district, the stranger should also make an excursion on foot or on a donkey to the mountain villages of Roccabruna (one hour), Castellare (one hour and a half), Gorbio (two hours and a half), and St. Agnes (three hours and a half). The first can be reached in a carriage,

the others cannot. St. Agnes is the most remote, and is situated nearly at the summit of the back ridge. There is an interesting drive towards the mountain ridge along the new Turin or Sospello road, up to the point where it now ceases, four miles from the shore.

The language spoken by the peasantry is a "patois," semi-Italian, semi-French, but inclining to Italian. The proprietors and tradesmen all speak both Italian and French, but with them French appears to predominate. Nearly all the shop-signs are in French. In feeling, the Mentonians appear to occupy about the same midway portion, although their Italian sympathies predominate. At the time of the annexation they petitioned unanimously to be "left alone," but their petition was not allowed to see the light. They are rather a handsome race, with Italian features, black hair, and dark eyes. Many very handsome young women are seen.

There is at Mentone a skilful and experienced Italian practitioner, Dr. Bottini. A talented French physician, M. Bonnet de Malherbes, who practises in the summer at Cauterets, in the Pyrenees, has also recently settled there for the winter season.

There are now many commodious villas and

apartments to let furnished. There are also three hotels and two boarding-house hotels. Chlericy's Hotel de la Pension Anglaise, where I have hitherto spent the winter, is the largest and best modern house in Mentone, and admirably situated. An English lady also intends opening a private boarding-house next winter. In these latter establishments, the terms are about seven or eight francs a day; in the hotels, rather more. The road to Mentone is by Paris, Marseilles or Toulon, and Nice; the expense from ten pounds to fifteen pounds.

Although only fourteen miles from Nice, the distance appears, and really is, very much greater, owing to the Turbith mountain, nearly 3000 feet high, having to be ascended and descended. The journey, indeed, takes four hours, too much for an invalid to undertake twice the same day. A visit to Nice, therefore, entails sleeping there, and is not even to be thought of except in very fine weather, as the mountain heights are cold and windy. This drawback, however, will soon cease to exist, as a road is about to be constructed along the sea-coast; and when it is finished, the drive from Mentone to Nice will only take an hour and a half, and will be one of the grandest and most

beautiful in Europe. Mentone will then become a warm and sheltered suburb of Nice.

Mentone and the village of Roccabruna formed a part of the principality of Monaco from the early Middle Ages. The princes of Monaco held their small principality as feudatories of Piedmont, and although swept away by the torrent of the French revolution, managed to become recognised in their former rights at the treaty of Vienna. Their authority, however, was exercised harshly, and, in 1848, Mentone and Roccabruna made a small revolution, in imitation of France, drove the Prince away, and declared themselves independent. The happy independence thus gained, with Arcadian immunity from taxes or soldiers, they enjoyed until 1860, when the Prince of Monaco ceded his rights over his revolted subjects to the Emperor of France for a sum of 160,000*l.* and the dignity of senator. Monaco, his faithful city of six hundred subjects, he retained as the capital of his diminished principality, under the jurisdiction of France. One of the conditions made with the French Emperor is the construction of the road in question by French engineers; another, by no means so laudable, is the retention of a gaming-house at Monaco. The road will be the precursor of the coast railroad to Genoa,

already contracted for, and will certainly much enhance the pleasure of a winter residence at Mentone.

Nice is a small southern capital, with its opera and theatre, its daily fashionable promenade and drive, its military band, and its swarm of gaily dressed people. More than half of the northerners who crowd there in the winter are not invalids at all. They are the cured invalids of former days, of all nations, to whom the southern winter sun has become a necessity. They are also specimens of the more restless of our countrymen and women, Anglo-Saxons who, after wandering all over Europe for years, settle down at last for the winter at Nice, because it is near home, and because letters reach in forty-eight hours.

Hitherto Mentone has been chosen as a residence by none of this tribe of health loungers. The Mentonians have all been real invalids, rather glad to escape from the gaieties of Nice, as well as from its dust and occasionally cold winds. As, however, many are becoming attached to this picturesque Mediterranean nook, no doubt, in the course of time, a foreign population of the same description will also grow up.

The inhabitants of Mentone are exceedingly gra-

cious and cordial to strangers, and are doing their utmost, in a quiet southern way, to render the place agreeable to them. There is now a good reading-room, well supplied with newspapers, and next winter there is to be a new cercle, or club, inaugurated. Last winter a series of balls were given by the members of the "Cercle," to which the strangers were invited. They were well attended by the French, and also by many of the less serious members of the English community, much to the gratification of the Mentonians. The latter cannot at all understand that there should be any objection to entering into such festivities on religious grounds. Various other plans for the improvement of the place are on the tapis.

The inhabitants have invested, I was told by the syndic, all their savings—about 80,000*l.*—in building villas and suburban houses for their visitors, and can now accommodate about three hundred comfortably and hygienically. These houses have been built outside the town, along the seashore, so that they unite the climatic advantages which Mentone affords with the hygienic conditions which are equally, indeed more necessary. In these respects Mentone is following in the wake of Nice, Cannes,

Hyères, and Pau, at all of which the residences prepared for invalids are principally suburban and therefore hygienic.

There is an English clergyman, the Rev. Mr. Morgan, settled with his family at Mentone, where he has built a house, whose kind and intelligent sympathy is always enlisted in behalf of his countrymen, and whose presence is a boon to all. The Church service has hitherto been performed in a chapel made by throwing several rooms into one, in an old "palace" on the seashore, reached by thoroughly Italian streets—alleys we should call them. One of the few resident English, Mrs. Usborne, a relative of Mr. Morgan, has recently presented a valuable site, and it is intended as soon as the funds are collected to construct a church capable of holding about three hundred persons. Last winter, the congregation on fine days generally reached one hundred and fifty.

A few years ago Mentone was merely a small Italian town, like the other towns on the Riviera, with but little power to supply the wants of foreigners, and especially of the English, who, wherever they are, expect to be made comfortable. Being accustomed to the best at home, our countrymen

when abroad fall into a state of extreme despondency if called upon to bear with coarse meat, sour bread, and bad butter. Every winter, however, has improved the markets, and now good bread, meat, poultry, eggs, butter, &c., are to be had, although sometimes only with a little trouble and contrivance. A new road is in course of construction to Sospello, a town in the mountains, which when completed will open out Mentone to the Alpine districts, from which it is now separated by its own barrier of mountains. This is the region that principally supplies Nice, and when it becomes easily accessible, part of these supplies will no doubt reach Mentone directly. As it is, it depends principally on the markets of Nice and Ventimiglia, an Italian town of fifteen thousand inhabitants, situated on the Riviera, seven miles more to the East. The Mentonian amphitheatre itself produces little if anything beyond olive oil, lemons, and oranges.

There is an English grocer established at Mentone, Willoughby by name, who keeps a store of groceries and English delicacies, and whose enterprising and obliging disposition much facilitates "life" to his countrymen; for at Mentone, as elsewhere, they are quite at sea without English appliances. He acts as house agent, and any application for informa-

tion addressed to him on the subject of houses, apartments, or anything else, would meet with immediate attention. There is also a large bazaar or store kept by an enterprising Mentonian — Amaranthe—in which everything is to be found. M. Amaranthe, who is also a very obliging, intelligent person, will procure any conceivable thing for his customers, if he has it not already.

Such is Mentone, physically and materially. I was so pleased with my first residence there, that I should have at once decided on returning the following winter, had it not been for the love of change, which impelled me to seek a still better climate. This desire for change is quite a feature in the invalid population met with in the south of Europe. It is in some respects beneficial in its operation, by giving the mind fresh objects of interest to take the thoughts from self, and from the many sacrifices which health exiles from home and their companions have to make. The difference between the smiling sunshine of a Mentone winter (a mere long English October) and our eight months' dismal season is very great, and yet there were few of the cheerful Mentonian exiles who would not gladly have returned to our cloud-obscured island, had it been prudent and possible.

The search after an unimpeachable climate, however, is in some respects rather like that for the philosopher's stone, for the elixir of life, or for the quadrature of the circle, a fruitless one. This will be exemplified by my own experience, as detailed in the following chapter.

CHAPTER IV.

A TOUR IN SEARCH OF A BETTER CLIMATE.

ALTHOUGH pleased with the winter at Mentone, I was anxious, as I have stated, on leaving England the following October, to find a still better climate, and, like most invalids, thought I might as well see a little of the world, and thus combine pleasure and profit. Like most invalids, also, I wavered between many places.

Madeira offers a mild, agreeable, uniform climate; but then it is relaxing, and there is the tedious and often stormy sea voyage. Dr. Mitchell has written a most seducing report of Algiers; and at one time I had quite decided on going there. Other reports, however, are not so favourable. The winters appear to differ greatly; and I heard, from reliable friends, of two months' rain, one month of such dust that the sea was all but invisible from the land, and of one month of intense heat, during the six of winter. This account alarmed me, so my thoughts turned towards Spain. But

Barcelona is a large town, with a cesspool-filled port in a tideless sea, like Marseilles and Genoa. Valentia has many miles of marshy rice grounds in its immediate vicinity. Malaga is a town of 90,000 inhabitants, and was decimated by the cholera last summer —a fact which does not say much for its sanitary state. Moreover, the hotels are inside the town, and there are no suburban villas. I may also add that, in the opinion of my friend, Dr. Edwin Lee, all the Spanish southern health cities are open to the objection that the heat becomes very great early in spring, so that invalids returning to the north of Europe often suffer from the great change, or have to prolong their stay longer than is prudent. On the other hand, Hyères, Cannes, and Nice are only modifications of the northern Mediterranean climate described in the preceding chapters, and certainly inferior to Mentone.

I therefore determined at last to turn my steps to Italy, and to critically examine the Eastern Riviera (Ri. di Levante), Pisa, Rome, Naples, and the more southern coast of Italy. Guided by previous knowledge of the country, and the information acquired during the preceding winter, I felt sanguine as to finding in Italy an "Eldorado" combining all the advantages of which I was in search.

In former days, in the days of health and strength, Italy exercised over me, as over many others, an indescribable fascination. Several times I escaped from the busy scene of professional life, and rushed to visit its cities and plains. Its classical, historical, and artistic souvenirs and attractions threw over it a charm that never palled. I then purposely threw aside the physician, in order to see nothing but ruins, battle-fields, paintings, and statues. Sickness and human decay appeared a profanation, and I strove to eliminate them from my thoughts, and thus to bring back none but pleasurable reminiscences.

Naples was the lovely southern bay on whose shores rises fire-crowned Vesuvius, and where the revealed cities of Herculaneum and Pompeii, Baiæ, the islands of Capri and Ischia, recal a thousand recollections. Rome was the former queen of the world, the cradle of Christianity, still studded with innumerable vestiges of its former grandeur: Florence was "La Bella Firenze," the home of the Medici, and the abode of countless artistic treasures: Pisa was the birthplace of Galileo, where the lamp that revealed to him the laws of the pendulum is yet to be seen hanging in the cathedral: whilst Genoa was the proud commercial city of former days, still showing many evidences of its former greatness.

This time the scene had changed. I returned to Italy an invalid in search of health, and the arts sank into insignificance; whilst hygiene, climate, and health questions ruled the day. With views thus altered, very different impressions were produced, and many important medical facts became evident, which, as a tourist, I had not analysed.

I entered Italy by Mount Cenis, and although it was only the 20th of October, there was a great deal of snow on the mountains, and it was very cold in the higher regions. Indeed, the weather was much too cold for chest invalids, who, if they cross the Alps at all, should do so much earlier in the season.

Genoa is not so much a medical station as a resting-place for travellers and invalids entering or leaving Italy. Its situation is admirable: at the angle of the gulf formed by the Eastern and Western Rivieras, protected by mountains, and exposed to the south-western sun. Hence it is very warm in summer, but in winter the protection afforded by the Apennines is incomplete, owing to a "defect in the armour." Behind Genoa the Apennines present valleys, through which the railroad from Turin has managed to find its way, and through which also the north-east wind reaches the town when winter has fairly set in on the plains of Lombardy. Still the protection is sufficient to

make the climate perfectly different in autumn and spring. Last October (22nd) there was a heavy cold fog when I left Turin, which continued until we reached the mountain-passes, completely obscuring the horizon. Winter was everywhere, the trees leafless, and the soil denuded. The fog had left us when we emerged from the first tunnel, and the air had become clear, cool, and bracing. On emerging from the last, a few miles from Genoa, we had gone back to mid summer; the sky was blue, the sun bright, the air warm, the windows and doors were wide open, and the out-door life of Italy was in full operation. It was indeed difficult to believe that half an hour—the passage of a tunnel through a mountain—could have so entirely changed the climate and the aspect of all around. Genoa presents two other disadvantages: it is a densely populated city; and, like all Italian towns, badly if at all drained, and unhygienically built. In all large towns in Italy the streets are very narrow, generally only a few feet wide. The object was no doubt twofold: firstly, to provide for the exigencies of fortification; and secondly, to exclude the sun, the summer enemy. The towns and villages now found in the South are all historical; they are the towns and villages of the Middle Ages, and as such circumscribed within walls and fortifica-

tions, just as hundreds of years ago. Such a style of architecture is proverbially unhealthy, especially in the South, amongst an extremely dirty population, to whom the decencies of modern civilization are as yet all but unknown. To crown the whole, all the principal hotels at Genoa are on the port, the receptacle of what drains there are, and tideless, as are all ports in the Mediterranean. The sooner, therefore, the invalid leaves Genoa the better.

Descending the Eastern Riviera, the first town or village of any importance is Nervi, a station much esteemed by the physicians of the north of Italy for consumptive patients. Nervi is better protected than Genoa by the mountains, which approach nearer the shore; and being small, principally composed of one long street along the shore, it is free from the hygienic objections to which Genoa is exposed. Nervi did not, however, appear to me to present any peculiar recommendation to strangers. The vegetation is that of the entire Riviera coast, and does not indicate an exceptional climate. The position is not peculiarly picturesque, and I believe the accommodation to be found is essentially Italian, which does not in any respect satisfy the English. Indeed, its proximity to Genoa and Turin appears to me its principal recommendation.

Chiavari, the next town, is situated along the sea-shore, in pretty much the same conditions as Nervi, and presents no feature calculated to arrest attention.

Sestri, further on, is an exceedingly picturesque town, on the margin of a small bay, and at the foot of a high spur of the mountain chain, which runs into the sea; but it faces the north-east, and is screened from the south by the spur in question.

The road then crosses this mountain and descends on Spezzia. I had retained from former travel a very high idea of the beauty of La Spezzia, and was quite prepared to make it my winter residence had I found the climate bear scrutiny; such, however, was not the case. The town is situated at the foot of a magnificent gulf seven miles in depth, bordered on each side by mountains of considerable height. The mountains also extend far inland behind, but they are not sufficiently high to entirely intercept the north-east winds. As a necessary result of this situation there is a great deal of rain throughout the winter, and the weather is often rather cold, as is evidenced by the vegetation. Moreover, there are marshes of considerable extent at the foot of the hills which surround the town, and in the autumn malaria is rife. I therefore determined to pursue my journey.

Between Spezzia and Pisa there is only one spot worth mentioning, and that is Massa Carrara. The town is small and clean, protected from the north-east by the high mountains in which the marble is worked, and the orange-trees appeared larger than on any part of this coast. But it is a dull little place, having no view of the sea, although near it. Neither here nor elsewhere along this coast, either, did I see the luxuriant lemon-groves of Mentone. Indeed, the protection afforded by the mountains which form the background of Mentone is infinitely superior to anything met with along the Eastern Riviera between Genoa and Pisa, and the vegetation is much more southerly at Mentone, and indicates a much higher winter temperature.

This time I examined Pisa attentively under the climatic and hygienic point of view only, and left it with a most unfavourable impression. Pisa is situated in the open plain, some miles from the mountains which protect it. This plain does not show the slightest evidence of southern vegetation; it does not even contain the olive-trees so common along the coast and on the adjoining hills. Nothing is seen but the dry-stick-like deciduous mulberry, with vines, like old ropes, trailing from them. The town is surrounded by a high wall, which must

impede ventilation. The streets are narrow, sunless, damp, and cold. The far-famed Arno, which passes through the town, forming an arc, is a mere ditch or moat, like the moat of an old fortified town in the north of France, with stones instead of grass, and a sluggish dirty stream meandering at the bottom—a kind of open main-drain. The quarter of the invalids is a quay on the bend of this moat river, about a mile long, and bordered by gloomy fourth-rate houses. Here the invalids are condemned to walk up and down, looking at the stones and dirty water below, occasionally swollen into a yellow torrent by the rains. The sunless streets are so cold that the chest invalids are not allowed to go into them. The country around is a mere dull, denuded plain, which even a southern sun cannot enliven. Moreover, it is often very cold at Pisa, more so than at Rome; there are often fogs on the Arno, and it rains constantly in winter.

To crown all, Pisa is an unhealthy town to its inhabitants, like Genoa, Florence, Naples, and all these ill-built, ill-drained, dirty, wall-cramped southern cities. The average duration of life is twenty-nine years at Pisa and Florence, and twenty-eight only at Rome and Naples; whilst in Paris it is thirty-nine, and in London forty-four. For corroborative

evidence I must refer to Dr. Carrère's highly esteemed work on "Le Climat de l'Italie."

Florence is not a winter residence for invalids: it is a mountain town, and much too cold. From Pisa you pass through thirty miles of valleys and mountain land to reach it, and once there, you are surrounded by mountains on every side, many of which were covered with snow when I was there, early in November.

Rome is a winter residence for healthy tourists, not for invalids. The malaria reigns there, more or less, all the year. Every winter it makes victims, even among the healthy. Moreover, invalids should scrupulously avoid churches, galleries, festivities, and parties: and what is Rome without these, the life of the Eternal City?—merely a temptation and a snare. I may add, that all that has been said about the dirt, defective drainage, and general unhealthiness of Genoa and Pisa, equally apply to Florence and Rome.

Thus I had to continue my pilgrimage, and started from Civita Vecchia for Naples. I did not intend to remain there, but to go on to Salerno, the celebrated medical school of former days, which is near, and admirably situated on the map. Naples exhibits the concentration of all the unhygienic con-

ditions previously alluded to. More than 500,000 dirty southerners are living in an extremely confined space, in high houses, in damp, sunless streets, in the midst of every imaginable abomination by which the eye and the smell can be offended. The drains all run into the tideless sea, or on to the shore. In the most fashionable part of the town, in front of the houses occupied by the nobility and by strangers, is a narrow public garden, the fashionable promenade, "the Chiaja," running for a mile along the shore. On this shore eight public drains empty themselves, not into the sea, but on to the sands; thence to trickle down by slow degrees. The largest is opposite one of the chief hotels, and is usually so offensive, that those who are alive to these questions always feel inclined to take a run in passing. On the land side of this garden is the main drive, or street, and on each side of the pavement, as in most other streets, there are large slits in the road every few feet, a foot long and about an inch broad, to allow the rain-water to escape into the drains, which thus freely communicate with the exterior. It is between these shore drains on the one side, and the drain-ventilated street on the other, that fashionable Naples daily promenades, and it is by the side of this choice region that our

countrymen live, and not unfrequently die. The picturesqueness of Naples life, closely analysed, is in a great measure that of filth, dirt, and rags. The picturesque fishermen pass their lives fishing at the mouth of these sewers. The picturesque lower orders eat, drink, and sleep, as it were, in public, windows and doors open, if they have any. They are clothed in rags, which they appear never to take off until they fall from them, and they are infested with vermin, which they scratch off each other at the street-corners. The town is surrounded by pestilential marshes, and is built on a tufa rock, or kind of pumice-stone, so porous that it lets the rain soak in twenty feet, to give it out in dry weather by degrees. Thus moss grows in winter wherever the sun does not reach.

A few days after my arrival in November, the autumn rains commenced with a warm oppressive sirocco, or south-east wind. The torrents of rain that fell in the first twelve hours washed the streets and drains of their accumulated abominations into the sea. The wind and waves, on the other hand, drove them back again and again on the shore, whilst the wind, rushing up the open drains, escaped through the rain openings in the streets, and through the open closets in the houses. The smell throughout

the entire lower part of the city was awful, and a considerable portion of the population was at once affected with abdominal pains, diarrhœa, and even dysentery. I was one of the first victims, and after nearly three weeks' illness, was only too glad to embark on a Genoa steamer, and to return to pure, healthy Mentone, where I spent the rest of the winter.

To conclude, however, about Naples and its bay. They are most fascinating to the mere healthy tourist, hallowed by associations and beauties of the most varied character. But to the invalid, Naples should be absolutely forbidden. The defective sanitary arrangements are not the only drawbacks. When the wind is in the north-east, the Apennines in that direction are so low, that it passes over them, and they become covered with snow, and the cold is intense. When it vears to the south-east—the sirocco—on the contrary, the heat becomes intense, and the air, being loaded with moisture from the sea, is very oppressive. These extremes, following each other rapidly, are very trying and unhealthy. The north-west, or mistral, also frequently blows into the bay with great violence, and is a trying, dangerous wind to invalids throughout the Mediterranean.

As I have previously stated, the impression made upon my mind by the sanitary survey of the principal health towns of Italy was unsatisfactory in the extreme. The authors whose works I have read on winter climates have, it appears to me, made an extraordinary but all-important omission. They have studied winds, sunshine, cloud, temperature, protection, and all the various elements which constitute climate, forgetting *hygiene*. And yet are not the laws of hygiene of more importance to the invalid than all the rest put together? Of what avail is it to place a patient suffering from a constitutional disease, such as phthisis, in the most favourable climatic conditions, if every law of hygiene is violated —if he is made to live in the midst of a foul, badly-drained, badly-ventilated town, such as Florence, Rome, or Naples? In these unhealthy centres of southern population, where the mortality is habitually very high amongst the healthy natives (much higher, as we have seen, than in our most unwholesome manufacturing localities), what right have we to expect the general health of our patients to rally? In reality, it would be as reasonable to send consumptive patients in the summer months to live in the worst parts of Whitechapel, Liverpool, or Glas-

gow, as it is to send them in winter to live in the centre of these unhealthy southern towns.

In former days, when the laws of hygiene were ignored by the medical profession as well as by the non-medical public—when fevers and plagues were merely studied and treated as inscrutable dispensations of Divine wrath, it was, perhaps, excusable for writers on climate to devote their undivided attention to meteorological questions. But now that the mist and darkness have been dispelled, that typhus fever and other town diseases have been traced to their causes—filth, defective drainage, &c., —we know that attention to hygienic laws is even more necessary for the recovery of health than it is for its retention. In choosing a winter residence, therefore, hygienic conditions should be first considered, even before warmth and sunshine.

If we are to be guided by such considerations, however, I must candidly confess that I have not yet seen a large town in the south of Europe (the health quarters of Nice and Pau excepted), the hygienic state of which is such as to render it a safe winter residence for an invalid. In most of these towns, moreover,—Rome, Florence, Pisa, Naples,— the positions selected for and devoted to invalids are central, and owe their protection in a great measure

to buildings, which secure to them the town atmosphere undiluted. Thus is explained the frequent deaths from "fever" amongst our countrymen, ill or well, residing in them, which we every year see chronicled. On the spot you are told that they have died from the fever of "the country." But this fever of the country, as far as I could gather from minute inquiry, is no other than our own old enemy, typhus, under a continental garb. Its characteristic features may be modified by some malarious or catarrhal element, but the type is the same. The cause, too, is identical in the Italian marble palace and in the St. Giles's hovel—foul air inside and outside the house, everywhere.

Having failed to discover any more sheltered spot than the vicinity of Nice in the Eastern Riviera, I determined, on leaving Genoa, to minutely examine the Western Riviera, along which there are many populous towns and villages. Each successive station—Savona, Finale, Oneglia, St. Remo, Ventimiglia—was examined, and abandoned as inferior, until I once more found myself in the well-remembered site of my previous winter's experience. The conviction which this journey produced, that the Mentone amphitheatre affords infinitely superior protection to

any to be found between it and Pisa, on either Riviera, will be explained by the following details.

On no part of the coast do the mountains in its immediate vicinity rise in a chain to the same height —namely, from 3500 to 4000 feet. Nowhere do they recede in the same manner from the shore in an amphitheatre, as it were, so as to completely shelter from the north, east, and west a hilly district such as the one which constitutes the centre of this amphitheatre. Nowhere also is there such a background of still higher mountains lying due north, so as to protect in its turn the semicircular shore chain. This background of mountain-land extends fifty miles to the north into Savoy, and is limited only in that direction by the Tende mountain, which is about 6000 feet high. These mountains extend towards the shore in a south-easterly direction, and all but reach it about Oneglia, half-way between Nice and Genoa. Thus between Genoa and Oneglia the mountain which skirts the shore is neither very deep nor very high, whereas between Oneglia and Nice the depth and height of the mountain-land constantly increases. Consequently, the amount of protection offered towards the north increases in the same ratio, until at Mentone the greatest amount of

shelter and the warmest climate of the entire Riviera is reached.

The various towns which skirt the coast are all naturally placed at the mouths of the rivers which form their ports, and the rivers of course empty themselves from valleys which break the mountain-line. These valleys being nearly always directed north and south or thereabouts, the towns are all placed in the coldest situations on the coast, at the entrance of breaks in the mountain-chain, down which the cold winds blow. A glance at the vegetation shows this: orange-trees retreat, and olives and pines take their place. Here and there, as the road winds along the coast, sheltered nooks and romantic sheltered bays are seen at one's feet, where the orange and the lemon, the cactus and the pepper-plant, seem to thrive luxuriantly, finding the same warmth and shelter as at Mentone. But in these exceptional corners there is generally no population —not a house; the traveller can only admire and pass on. Again, in the other Riviera towns the inhabitants are thoroughly Italian; they still live on maccaroni, olive-oil soup, and bread, rarely indulging in meat, and ignore entirely the multitudinous wants and requirements of our "difficult-to-please" countrymen.

The little town of Mentone was built, like all other Italian towns, for the purpose of defence. It is no exception, therefore, to the rule. Many of its older streets are sunless lanes, a few feet wide; but the visitors have nothing to do with them, and need never enter them. It is, however, cleaner than usual, owing to the great value of all refuse. The people—an industrious race—have to cultivate the rock, and have no pasturage, no cattle; only donkeys and mules. They husband their manure, therefore, with jealous care, and let none escape into the sea or elsewhere.

Thus, neither the land nor the sea is poisoned, as in the larger towns of the Mediterranean coast. This is unquestionably one of the greatest health advantages of small localities. It is worth all the ruins and art treasures of Italy to the real invalid, with whom the main point is to save or to prolong life, not temporary pleasure and amusement.

In conclusion, I must give one parting caution. The experience gained in the above tour has convinced me that it is impossible to effectually pursue health and pleasure at the same time. I am persuaded that no greater mistake can be made than to endeavour to combine sight-seeing with wintering abroad for health; or than for an invalid to accom-

pany strong, healthy, sight-seeking friends or relatives. The invalid who winters abroad should be the main consideration. He or she should start early, go direct to the destination, and leave winter quarters to return home only when the fine weather is thoroughly established, towards the latter end of April or in May. And yet nearly all fall into the contrary error. As soon as March comes, the wildest travelling plans are formed on all sides—often by the greatest sufferers. The object is the restless Anglo-Saxon desire to see the world on the way home; the result is frequently to bring the invalid into every kind of danger.

A very pleasant lounging homeward journey may be made through the south of France, with little or no risk; but such a journey by no means satisfies the majority of our invalid countrymen and countrywomen. Naturally enough it is Italy they sigh for, Italy they want to see: Genoa, Florence, Rome, Milan, Venice, the glorious Italian lakes, and the grand Swiss mountains, with their glaciers, their torrents, and their pine forests. Thence the danger. The unwholesome towns I have described, the burning plains of Lombardy, the snow-covered passes of the Alps, are pregnant with danger, and should be avoided by the diseased until they have regained health, and can once more defy the elements.

APPENDIX.

THERMOMETRICAL TABLES.

During the winters of 1859-60 and 1860-61 I kept, with great care, a register of the temperature at Mentone at different periods of the day. In the following tables I have given the minimum and maximum only, as registered by a Fahrenheit thermometer, placed on the north side of the house in which I resided, and about four feet from the soil. The Hôtel de la Pension Anglaise is all but level with the sea, and its back yard is certainly the coolest position I could have chosen. An elevation of a few feet in this locality gives a general increase of two or three degrees, so that on the rare occasions when the thermometer marked 32° with me, and when there were slight films of ice in the yard, at the houses immediately behind the hotel, about sixty feet above the sea level, the temperature did not descend lower than 34° or 35°.

I must add that these observations were made in the inner or eastern bay, which is much more protected than the western, and, as a necessary consequence, rather warmer.

TABLE I.

—	November.		—	December.			
	1860.			1859.		1860.	
	Min.	Max.		Min.	Max.	Min.	Max.
1	—	—	1	52	62	—	—
2	—	—	2	48	54	—	—
3	—	—	3	45	51	—	—
4	63	69	4	42	51	—	—
5	63	69	5	44	53	—	—
6	63	69	6	45	53	54	64
7	61	69	7	47	57	51	61
8	59	68	8	47	55	50	58
9	52	68	9	45	57	49	60
10	59	63	10	48	56	48	64
11	50	64	11	44	55	49	61
12	58	62	12	43	48	45	62
13	50	61	13	43	52	42	64
14	49	60	14	39	45	43	62
15	51	59	15	40	46	43	62
16	49	49	16	38	43	43	61
17	48	59	17	35	45	42	60
18	41	61	18	37	43	37	60
19	49	67	19	42	48	39	45
20	47	57	20	40	45	37	59
21	47	54	21	38	46	38	52
22	50	60	22	38	45	32	54
23	53	61	23	42	53	32	58
24	54	58	24	46	55	40	50
25	53	60	25	45	48	41	50
26	50	60	26	48	53	42	60
27	51	60	27	45	51	47	62
28	49	59	28	43	51	48	64
29	51	60	29	43	54	43	62
30	51	59	30	46	53	42	57
31	52	62	31	46	53	46	52
Media	47·5	55·7	Media	43·3	51·	44·5	58·6

TABLE I.—*continued.*

—	JANUARY.				—	FEBRUARY.			
	1860.		1861.			1860.		1861.	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
1	46	53	40	51	1	41	51	50	54
2	48	57	42	52	2	43	51	45	53
3	50	57	42	53	3	37	45	42	52
4	52	58	42	49	4	38	45	44	53
5	52	60	42	52	5	36	45	45	52
6	51	57	44	51	6	38	49	45	54
7	47	53	42	50	7	40	51	48	53
8	43	51	40	56	8	40	51	45	55
9	43	49	47	58	9	37	51	43	50
10	43	52	47	58	10	42	52	42	53
11	48	53	46	52	11	43	51	46	52
12	48	52	46	52	12	41	50	45	50
13	43	50	44	49	13	38	48	39	50
14	43	51	42	50	14	39	50	41	51
15	46	54	42	52	15	38	52	44	52
16	43	51	41	52	16	39	52	46	51
17	42	53	40	50	17	42	50	44	52
18	45	53	39	51	18	39	50	46	53
19	45	53	40	52	19	39	52	42	52
20	47	50	39	51	20	38	50	45	55
21	45	51	45	52	21	37	49	50	57
22	45	53	45	51	22	42	52	51	59
23	44	48	42	51	23	40	50	49	58
24	40	50	46	56	24	40	52	50	56
25	43	49	47	55	25	42	53	50	57
26	40	50	45	53	26	42	52	47	58
27	40	49	46	52	27	42	60	40	59
28	42	51	46	53	28	43	56	49	58
29	41	51	45	52	29	44	57	—	—
30	41	48	45	54	30	—	—	—	—
31	42	52	46	55	31	—	—	—	—
Media	44·7	52·2	43·3	52·4	Media	40·	50·9	45·4	53·8

TABLE I.—*continued.*

—	MARCH.				—	APRIL.			
	1860.		1861.			1860.		1861.	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
1	47	57	45	56	1	54	62	47	62
2	50	57	47	57	2	47	60	47	65
3	46	57	47	56	3	50	60	46	59
4	45	58	45	56	4	50	56	48	64
5	44	62	46	57	5	52	63	51	62
6	44	55	45	55	6	53	64	50	64
7	43	59	45	56	7	59	73	53	64
8	43	48	45	57	8	55	68	52	64
9	39	42	45	56	9	55	66	51	63
10	37	47	45	57	10	50	64	46	64
11	37	47	45	59	11	54	58	46	60
12	39	49	46	57	12	50	64	49	64
13	40	44	49	58	13	49	62	51	68
14	42	54	48	59	14	50	62	54	69
15	43	48	47	60	15	47	63	54	69
16	45	52	41	54	16	53	60	—	—
17	44	54	42	56	17	54	64	—	—
18	43	55	42	59	18	55	65	—	—
19	45	61	43	60	19	54	62	—	—
20	46	62	42	59	20	49	56	—	—
21	45	59	42	63	21	40	54	—	—
22	47	60	52	60	22	43	56	—	—
23	48	59	47	64	23	45	56	—	—
24	46	59	47	63	24	—	—	—	—
25	53	62	50	65	25	—	—	—	—
26	47	57	48	64	26	—	—	—	—
27	46	62	49	64	27	—	—	—	—
28	48	63	52	62	28	—	—	—	—
29	49	62	52	60	29	—	—	—	—
30	49	62	52	62	30	—	—	—	—
31	52	62	47	58	31	—	—	—	—
Media	44·9	56·2	46·3	58·6	Media	50·8	61·8	49·2	64·

TABLE II.

Nile and Mentone compared. 1860.

—	January. Minimum.		February. Minimum.		—	January. Maximum.		February. Maximum.	
	Nile.	Ment.	Nile.	Ment.		Nile.	Ment.	Nile.	Ment.
1	38	46	44	41	1	67	53	73	51
2	39	48	43	43	2	65	57	74	51
3	42	50	47	37	3	65	57	83	45
4	45	52	49	38	4	73	58	85	45
5	44	52	44	36	5	76	60	80	45
6	39	51	42	38	6	75	57	85	49
7	40	47	50	40	7	77	53	67	51
8	39	43	48	40	8	75	51	66	51
9	43	43	50	37	9	82	49	68	51
10	45	43	40	42	10	70	52	64	52
11	44	48	38	43	11	69	53	75	51
12	41	48	43	41	12	75	52	77	50
13	43	43	44	38	13	76	50	80	48
14	43	43	43	39	14	79	51	81	50
15	44	46	42	38	15	66	54	84	52
16	43	43	50	39	16	70	51	86	52
17	51	42	50	42	17	77	53	88	50
18	49	45	55	39	18	73	53	90	50
19	44	45	40	39	19	67	53	66	52
20	45	47	40	38	20	73	50	70	50
21	45	45	50	37	21	73	51	74	49
22	45	45	45	42	22	76	53	77	52
23	51	44	50	40	23	75	48	74	50
24	50	40	40	40	24	75	50	79	52
25	50	43	40	42	25	78	49	80	53
26	51	40	49	42	26	82	50	74	52
27	48	40	48	42	27	75	49	65	50
28	46	42	40	43	28	71	51	65	56
29	45	41	49	44	29	76	51	66	57
30	51	41	—	—	30	75	48	—	—
31	42	42	—	—	31	82	52	—	—
Media	44·6	44·7	45·2	40·0	Media	72·8	52·2	75·7	50·9

TABLE III.

Mean Maximum Temperature in Shade.

	In January.		February.
Nile	72	...	75
Madeira	66	...	67
Malaga	58	...	58
Mentone	52	...	50 (1861 ... 53)

M. de Brea's Monthly and Annual Media for Ten Years, from 1851 *to* 1860.

January	48·2
February	48·5
March	52·
April	57·2
May	63·
June	70·
July	75·
August	75·
September	69·
October	64·
November	54·
December	49·
Annual	60°·8

These data were obtained by observations made at 6 A.M., 2, and 10 P.M.

The maximum was 89°·6 the 3rd August, 1859. The minimum 0° the 22nd January, 1855.

TABLE IV.

Showing how the Heat increases and decreases through the Year. (*Drew's Meteorology.*)

—	January.	Feb.	March.	April.	May.	June.
	°	°	°	°	°	°
1	·037	·063	·170	·300	·537	·774
2	·033	·055	·166	·318	·555	·781
3	·033	·066	·162	·333	·570	·788
4	·029	·081	·162	·344	·585	·800
5	·022	·107	·166	·355	·596	·800
6	·018	·130	·170	·366	·613	·803
7	·011	·137	·170	·370	·607	·807
8	·001	·137	·170	·370	·603	·811
9	·000	·130	·174	·366	·596	·814
10	·007	·118	·177	·355	·588	·822
11	·003	·111	·185	·351	·585	·833
12	·003	·103	·188	·348	·585	·844
13	·003	·100	·203	·355	·588	·851
14	·003	·092	·214	·370	·603	·862
15	·000	·096	·222	·377	·618	·870
16	·000	·096	·229	·388	·633	·881
17	·014	·100	·233	·396	·640	·885
18	·029	·103	·233	·403	·651	·888
19	·037	·107	·233	·407	·659	·892
20	·048	·111	·237	·414	·670	·900
21	·059	·111	·237	·425	·677	·903
22	·066	·114	·237	·444	·688	·907
23	·074	·126	·240	·448	·696	·914
24	·085	·133	·244	·448	·700	·922
25	·092	·148	·248	·448	·707	·929
26	·103	·155	·251	·448	·711	·937
27	·103	·159	·255	·462	·718	·944
28	·096	·166	·262	·481	·729	·955
29	·088	—	·270	·503	·737	·962
30	·077	—	·277	·518	·748	·962
31	·066	—	·292	—	·762	—
Media	·040	·112	·215	·397	·643	·868

TABLE IV.—*continued.*

—	July.	August.	Sept.	October.	Nov.	Dec.
1	·962	1·000	.862	·666	·403	·229
2	·959	·992	·855	·662	·396	·233
3	·959	·988	·851	·651	·392	·229
4	·962	·985	·848	·648	·385	·222
5	·966	·981	·840	·640	·377	·218
6	·970	·981	·833	·629	·370	·207
7	·974	·981	·825	·622	·355	·192
8	·970	·981	·822	·614	·344	·188
9	·962	·977	·818	·607	·333	·185
10	·962	·974	·814	·600	·825	·181
11	·966	·970	·811	·588	·314	·174
12	·970	·966	·807	·574	·311	·166
13	·974	·962	·803	·555	·296	·151
14	·970	·962	·796	·540	·288	·155
15	·970	·959	·785	·529	·277	·166
16	·970	·959	·777	·522	·262	·177
17	·970	·955	·770	·514	·255	·170
18	·970	·944	·759	·507	·248	·162
19	·970	·940	·755	·503	·248	·148
20	·966	·937	·744	·503	·248	·129
21	·962	·929	·740	·496	·240	·107
22	·962	·922	·737	·485	·229	·088
23	·962	·918	·733	·474	·218	·070
24	·966	·918	·722	·459	·203	·055
25	·974	·914	·718	·444	·196	·037
26	·985	·903	·711	·440	·200	·033
27	·992	·896	·703	·433	·207	·037
28	1·000	·892	·696	·425	·222	·055
29	1·000	·885	·685	·418	·225	·066
30	1·000	·874	·677	·411	·225	·070
31	1·000	·870	—	·407	—	·077
Media	·972	·945	·776	·534	·286	·141

A perusal of the above tables will show that they thoroughly explain and substantiate the details I have given respecting the climate and vegetation of Mentone. The first winter, 1859-60, the lowest night temperature was 35° on the 17th December. The thermometer never descended lower than 37° on any other occasion. In the second winter, 1860-61, the lowest point attained was 32° on two nights in December, the 22nd and 23rd. On no other night did the thermometer mark a lower temperature than 37°, as in the previous winter.

In both winters this fall in the temperature coincided with extreme and unusual cold in the north of Europe. In 1859 the frost was very severe and prolonged throughout the North at that time, and in 1860 the thermometer descended at the same epoch 40° below the freezing point in England. The cold was more severe than had been known for thirty years throughout Europe.

Indeed, I remarked at Mentone that exceptionally cold or stormy weather always coincided with intense frosts or violent storms in the north and centre of Western Europe. We were clearly not out of the influence of extreme meteorological disturbances occurring in the western regions of Europe, although we felt them but faintly. At those times we had generally a north-westerly wind, the sun was totally obscured by clouds, the higher mountains became covered with snow down to the

level of the olive-groves, and cold rain fell on shore. These were our worst days; but fortunately such weather, as stated, never lasted more than two or three days. When on these occasions we received newspapers and letters from home a few days later, we invariably heard of fearfully cold weather on land, and storms at sea.

It will be perceived that although the night minimum seldom descended below 40° during December, January, February, and March, it also seldom ascended above 50°, and was generally between 40° and 50°. The day maximum in the shade varied from 50° to 58°, although occasionally below 50°. This latter temperature nearly always coincided with a low night temperature and an obscured sky, and nearly always with snow on the mountains and rain on the shore.

The above data may be depended upon, as they were taken from self-registering thermometers made by Negretti for scientific observation. It is the minimum and maximum temperature of any given region that principally regulates vegetation, and also to a great extent climate; and I believe, consequently, that on such data only can we form an accurate idea of the real climate of any locality. If a thermometer is only fairly placed according to the rules adopted by scientific meteorologists and the instruments used are good, there can be no possible deception by adopting this mode of obser-

vation. Any other is liable to error, especially in sunny climates, unless extreme precaution be taken to eliminate all undue solar influences, reflected heat, exceptionally sheltered situations, &c. Many observations in health localities are made with a mental bias which invalidates them. Thus, had I made my observations at ten o'clock A.M. on a second story, thirty feet from the ground, and within the influence of reflected heat from the sun, I might have obtained a temperature of 60° all but throughout the winter.

Dr. Dalrymple, in his recent interesting work on the Climate of Egypt,* gives the minima and maxima for the months of January and February accurately observed in his Nile boat. The night minimum was a fraction lower than at Mentone during the month of January, 1860 (from latitude 27° 13′ to 22° 10′). During the month of February the mean was 5° higher, as will be seen by the comparative Table No. II. (from latitude 25° 55′ to 31° 46′), showing the more rapid advance of spring. The day maximum, on the contrary, was much higher during both months, being all but constantly between 70° and 80°, and sometimes above 80°. The mean of January was as high as 72°·8, that of February 75°·7. Such a range must be very trying, especially to chest cases—from 40° or 45° at

* Meteorological and Medical Observations on the Climate of Egypt. By D. Dalrymple, M.D. 1861.

night to 70°, 75°, or 80° in the day. At Mentone the mean maximum of January in the same year was 52°·2, that of February only 50°·9, but in 1861 53°·8. Although the climate be dry at Mentone, whenever in the autumn or in the spring the thermometer is at or above 70°, most of the chest invalids feel oppressed, although less so than in England. They appeared to get on best with a dry, sunshiny, cool atmosphere, such as generally prevailed, with the thermometer at 56° in the shade north, and from 60° to 64° in the shade south.

Moreover, I should think that a low night temperature, which has clearly to be encountered on the Upper Nile as well as on the Mediterranean coast, is better met by a serious invalid in a comfortable, well-built house on land than in a boat on a river, even if that river be the Nile; not to speak of the discomforts of the long journey, of the proverbial unhealthiness of Alexandria and Cairo, where stations have to be made, and of the actual fatigue of constant change and motion.

At Malaga and Madeira the day maximum is also higher than at Mentone, according to Dr. Edwin Lee,* Dr. Francis,† and Mr. White,‡ as seen in

* Spain and its Climates, with a Special Account of Malaga. By Dr. Edwin Lee. pp. 64. 1855.

† Change of Climate, with an Account of the most eligible Places of Residence for Invalids in Spain and Portugal. By Dr. D. S. T. Francis. 1853.

‡ Madeira: its Climate and Scenery. By Messrs. White and Johnson. 1860.

Table III. The night minimum of Malaga is not given by these authors. Mr. White says that at Madeira the lowest point attained by a self-registering thermometer in 1841 was, in January, 51°; in February, 53°. The mean minimum was 55° for both months—much higher, as we have seen, than either the Nile or Mentone medium.

In Table III. I have given the comparative mean maximum heat of the Nile, Madeira, Malaga, and Mentone during January and February. I have also added M. de Brea's Media for Mentone temperature for each month, founded on ten years' observations. These observations prove that the summer temperature at Mentone is moderated by the proximity of the sea, as well as the winter. The summer maximum in ten years was only 89°.

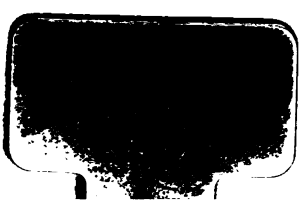
The Table No. IV. is taken from Drew's "Meteorology," and will be useful to invalids leaving England and returning, as it shows the days of autumn and spring that correspond in temperature. The coldest day in the year is marked by ·000, the warmest by 1·000.

Thus, an invalid leaving England October 1st, will find that the mean temperature of that day is °·666. The corresponding day of spring is the 20th May—viz., °·670. One use of this table is the warning it gives against a too early return home, which all are anxious to reach after the winter's long absence.

THE JOURNEY TO MENTONE.

The invalid should sleep at Folkestone, and only cross if fine. It is folly to cross in rough weather. Boulogne to Paris, five hours. The morning express to Marseilles and Toulon leaves Paris 11 A.M.; reaches Lyons, 9.37 P.M.; Marseilles, 6.35 A.M.; Toulon, 9.10. The best way to divide the journey is to sleep at Lyons; thence the next day by ordinary train to Valence, 12.4 P.M. Sleep there. On the third morning join the Paris night express, 9.39 A.M.; which reaches Marseilles, 3.16 P.M.; Toulon, 5.28. At Toulon there is a good new hotel (De l'Amiraute) near the station, where a carriage with two or four horses can be obtained for Mentone. The journey can be accomplished in three days' travelling of eight hours each, or four days of six. The latter is preferable. Sleep at Vidauban, Cannes, Nice. Avoid Frejus, where the inns are horrible. Fares, first class, London to Paris, 2*l.* 14*s.*; Paris to Toulon, 106fr. (4*l.* 5*s.*); carriage to Mentone, with two horses, about 240fr. (9*l.* 12*s.*), with four horses, from 300fr. to 400fr. (12*l.* to 16*l.*) There are diligences, fare through, about 50fr. (2*l.*) There is also a steamer from Marseilles to Nice, Wednesday and Saturday, fare 32fr. (1*l.* 10*s.*) Should the traveller wish to remain a few days at Nice, a private carriage from thence to Mentone can be had for about 30fr., and the journey takes about four hours.

THE END.



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